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January, 1953

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The Green Thumb

COLORADO'S GARDEN MAGAZINE



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The Green Thumb

Vol. 10

JANUARY, 1953

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THE COLORADO FORESTRY AND HORTICULTURE ASSOCIATION

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1355 Bannock Street

• Denver 4, Colorado •

TAbor 3410



Long's Peak Across Bear Lake, Photo by Chas. J. Ott.

JANUARY

Endlessly stretches the snow
The sun stays low
The pinched airs flow
Through shivering tree-heads bare,
Scant windy birds are in air
And the lead-blue film is everywhere;
The deeps of the woods lie near
The footless ways are clear
Sconced in the sleep of the year.

Glisten and freeze on field and pond
The lines are unbond!—
And the gamut is stript to the ends and beyond.

It is now that the four winds meet
'Tis now that the world's in my feet,—
Call of my heart, be fleet be fleet!

Io
The snow!

—By LIBERTY HYDE BAILEY,
From *My Great Oak Tree* by Permission.



Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

OFFICERS

President.....Fred R. Johnson
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Secretary-TreasurerMildred Cook
Editor.....George W. Kelly

SCHEDULE

- January 4, Sunday. Snowshoe Trip to Urad Mine. Drive to Jones Pass turnoff on Highway 40.
- January 11, Sunday. Apex and American City snowshoe trip.
- January 14, Wednesday, 8 P. M. Organic Gardening Club meets at Horticulture House.
- January 18, Sunday. Loveland Pass Ski Area. Snowshoe trip up trail that leads off to the right from the upper tow.
- January 21, Wednesday, 8:00 P. M., in the Auditorium of the Evans School, 11th and Acoma. The Charm of the Desert, story and color slides of "four corners country," presented by Louis and Grace Binderup, Bill Baudendistel, and George and Sue Kelly.
- January 25, Sunday. Snowshoe trip in Winter Park ski area.
- January 28, Wednesday, 8:00 P. M. Meeting at Horticulture House for commercial landscape men and others interested in lawns, to talk about methods of making better lawns. Herbert Gundell, chairman.
- February 1, Sunday. Snowshoe trip to Herman Gulch. On road to Alice.

For information about Sunday trips call Mrs. Timm at PEarl 5565, or the Horticulture House at TAbor 3410. All Sunday trips meet at Horticulture House at 8:30 A. M.

ATTENTION,
FLOWER ARRANGERS

The St. Luke's Hospital Flower Care Group has asked us to tell you about their activities. The group is making an appeal for new members and volunteers who would be interested in working from 9:30 until 2:00 daily (except Sundays) taking care of the patients' flowers. They water the plants and take care of the cut flowers. The uniforms are cherry-red pinafores and white blouses, costing \$3.25, and the dues are \$2.00 a year.

When the new wing of the hospital is opened, there will be openings in the gift shop, snack bar, library, surgical dressing division, and in the hospitality cart group.

Here is a chance for you to combine your hobbies with your desire to help people.

If you are interested, call Mr. F. W. Dyer, 1315 Vine Street, EAst 3687, for details.

"My good man," asked Tolstoy of a peasant whom he found plowing in the field, "if you were to die tomorrow, what would you do today?" The peasant wiped a grimy hand across his forehead and answered, "I would plow." Such is the quiet assurance that comes to those who work in the soil.—H. F.

PLAN IN JANUARY FOR PLEASURE IN JUNE



I. WHY DO WE HARP ON GARDEN DESIGN?

By M. WALTER PESMAN

PERHAPS "Garden Design" is too big a word for a very simple idea. Finally it all comes down to nothing more or less than order and good common sense. What is more, when a garden is orderly arranged for every-day use, and pleasant to look at—then both artists and "common folks" (many of them artists at heart), agree that it is a good garden. That is all there is to good garden design.

In a way it is like placing a piano or an easy chair in the living room—in one spot it looks just right, in another spot it may spoil everything.

Strange as it may seem, there are two very different kinds of people who have difficulty in garden design. The one kind is scared of doing things except in the old established way. As a result we get the same garden over and over, tedious and unexciting.

The other kind says: "Well, if you admit that you can't go by the old rules, why do any planning at all; anything goes." The natural result is a "mess."

Since we are in a period of change—in garden design as in almost everything else—how are we going to find our way?

Will pictures help? Pictures of modern gardens?

With that idea in mind I have again looked at photos of hyper-modern gardens, both of Europe and of America. As a result the following observations crop up.

1. Cutting up a garden with odd diagonal lines may just make it look queer. Some people may call it modern but that is not the same thing as queer; make no mistake about that.

2. Adding a timberline tree stump or some weird ungainly statue with unusual proportions does not *make* a garden. It may be interesting or fascinating the first time you see it, but how about living with it, day after day?

3. A screen fence in the right spot gives a feeling of coziness; in the wrong spot it may irk you for its interference.

4. Plant boxes (call them "planters" to sound up-to-date) can be ideal for furnishing just the proper line in the right place; they may also be a regular cemetery of plants that lack drainage, water and room to grow.

5. After all is said and done, these pictures give one a sense of relief in getting away from the stereotyped. Some of these new ideas point the way to a sensible solution of garden living.

Now then, after this semi-negative approach, let us see what we can learn from the modern trend and what we can apply in our own garden.

The proper design for a modern garden is not a superficial pattern

that can be applied to any home ground with minor variations. Rather is it a natural development that grows out of our way of life?

A garden is more than a pretty picture that we look at from our living room window. Yes, it should be that also, but a lot more. As our mode of living has changed, as our ideas about nature have changed, so must our garden change.

Above all, we must see to it that our garden fits our way of life. That holds for the general pattern, it holds for detailed use, even to the point of considering the time of day. Let me explain.

Perhaps as we wake up and have our breakfast we want a pretty picture to look at, carefully designed to be framed by bedroom window and breakfast nook outline.

Some working couples may not require too much from their garden during week days until five o'clock in the evening. Then they are apt to want a nice quiet place to sit and relax: cool in summer-time, pleasant in fall, protected in winter. That spot (or spots) may have an "out-view" to the mountains, or merely a pleasant look at a flower border, a wall fountain, a birdbath.

Saturdays and Sundays present an entirely different need. We may want to do active gardening, take a sunbath, entertain our friends in the garden. Oh, yes, and there is the wash that needs to be hung out!

Am I forgetting the children? Heaven forbid! Where is that tree for them to climb, their swings and bars, their place to romp?

The problem now becomes: how to translate all these wants into reality in our garden? Whether you like it or not, there is no getting away from the need of a plan, either on paper or in your head, if it is roomy enough and systematic enough to hold it.

To begin with then, we can indicate in black and white where those important views are, where the clotheslines go without monopolizing the entire area, where the compost pile can be hidden, where the sandbox can be seen from the kitchen window, where the logical place is for peonies, roses, flower border.

If you don't like to look at your neighbor's washing from where you love to sit, a small screen close in will do as much or more as a tall solid fence on the property line.

Suppose you want cool shade in

Well Designed Garden of Mr. and Mrs. Frank McLister.



summer and caressing sunrays in winter—apply the lesson taught by the stone sundial in Mountain View Park. A flat plane at a very definite angle, extending south, traps the sun in winter, gives shade from it in summer. Quite simple. A well-placed tree does it less simply.

Again, if your garden is a monotonous flat surface, there are planting boxes, retaining walls, screen fences, hedges, seats.

Water can be introduced at small cost as pools, wall fountains, cascades, jets, sprays. Be sure to have it audible.

Plastic and glass are now possibilities in a modern garden: use your ingenuity and you may develop something unique.

Rock gardens and dry walls are not “old-fashioned” and therefore taboo. Neither are gazing globes and pergolas, if placed right and designed right.

And so—

We are coming back to the same place from which we started: garden design is not a question of “what” but of “where.” Modern, or traditional, good taste is orderliness, and orderliness means putting the right thing in the right place.

HISTORY OF GARDEN ART

M. Walter Pesman is going to teach a course showing how our present gardens are related to those of the past, what features are borrowed from each age, and how they originated. The evolution of garden art is traced from the primitive to the modern, giving attention to the Renaissance, Japanese, Persian, and many other styles. Illustrated with lantern slides. This will be a non-credit course offered by Colorado University. Classes will begin January 7, 1953, and will meet from 7:30 to 9:10 each Wednesday night through March 11th. The fee will be \$10.

HORTICULTURAL HAND LOTION

By HELEN FOWLER

Tragacanth	2 dr.
Boric Acid	4 dr.
Glycerin	4 fl. oz.
Alcohol	4 fl. oz.
Water	24 fl. oz.

Dissolve acid in the water, with heat, add the tragacanth, and macerate with frequent stirring until uniformly mixed; strain through muslin, add glycerin, alcohol, color and perfume.

A Modern Garden Designed for Living.





II. GOOD GARDENS ARE SCREENED

One of the first things you will notice that most good gardens have in common is that they are screened from outside and conflicting views. Only when a degree of privacy is obtained will you begin to get real enjoyment from your pleasure garden area.

This screening may be obtained by clipped deciduous shrubs and trees, or by year round effective evergreens.





A plain brick wall may give the seclusion necessary, as in the garden of Mr. John G. Kerr, or it may be elaborately designed and colored, as in the Lou Appeldorn garden.



Sometimes the most effective border is of split cedar covered with vines, or a combination of fence and assorted shrubs and evergreens as in the I. F. Downer garden. Or sometimes it may be entirely plant material as in the John Gates garden.





The beautiful Ella Weckbaugh garden could never be as effective without this appropriate screen planting. This may be a large estate, but the same principle applies to a small place, as in the Harry Hanks garden in Englewood.





III. HOW ABOUT SOME PLANNING???

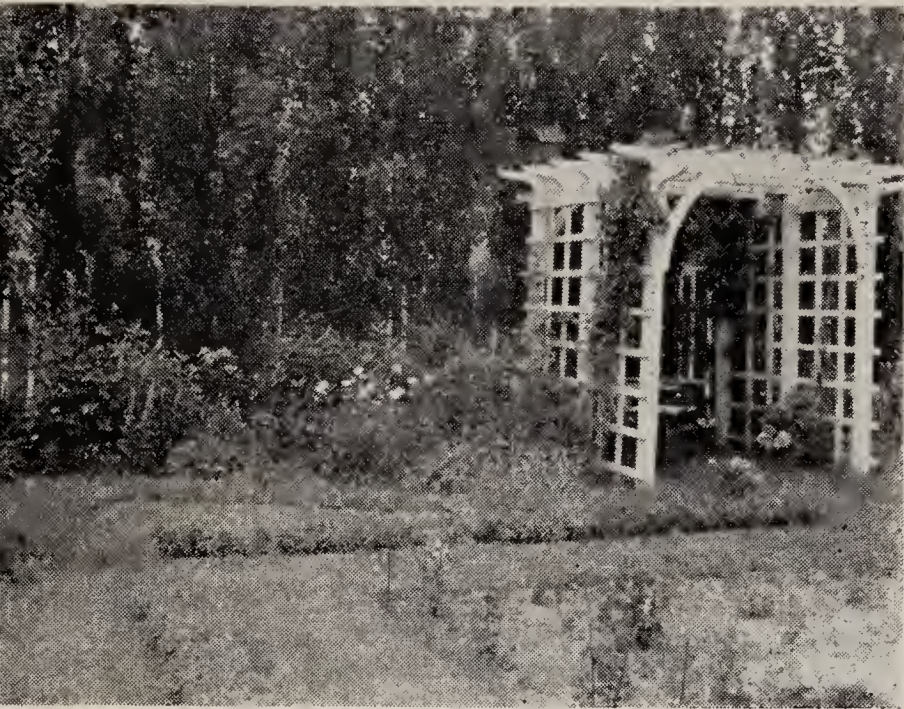
There are thousands of new homes like these in the Denver area . . . and they all need carefully planned landscaping to give them the necessary individuality. Sure, some of them, as built, do have differently colored roofs or shutters, but the thought-out placing of trees, shrubs, flowers, and garden furnishings will make each a home to fit the character and preferences of the family living there.



Above: Endless Rows of Little Houses Lacking Individuality.

Below: These Fólks Have Done Much in Two Years' Time by Careful Planning To Add Character and Livableness to Their Homes.





Pergola.

IV. PLAN YOUR GARDEN TO SUIT YOUR FAMILY

After you have planned the rather obvious and necessary features of your "front" yard and your service areas, then the remainder of your grounds can be laid out to accommodate the hobbies and preferences of each member of your family. Maybe you will want a . . .

Perennial Garden.



Peas, Pumpkin or Parsnip Garden.



Patio Garden.



Pool Where Lilies and Fish Can Live



Platform for resting and entertaining.

Petunia Border.





Pink flower garden.

Peony bed.





Perennial Phlox Planting.

Pinyon Pine.



Polly Peach tree.





Peace rose bed.



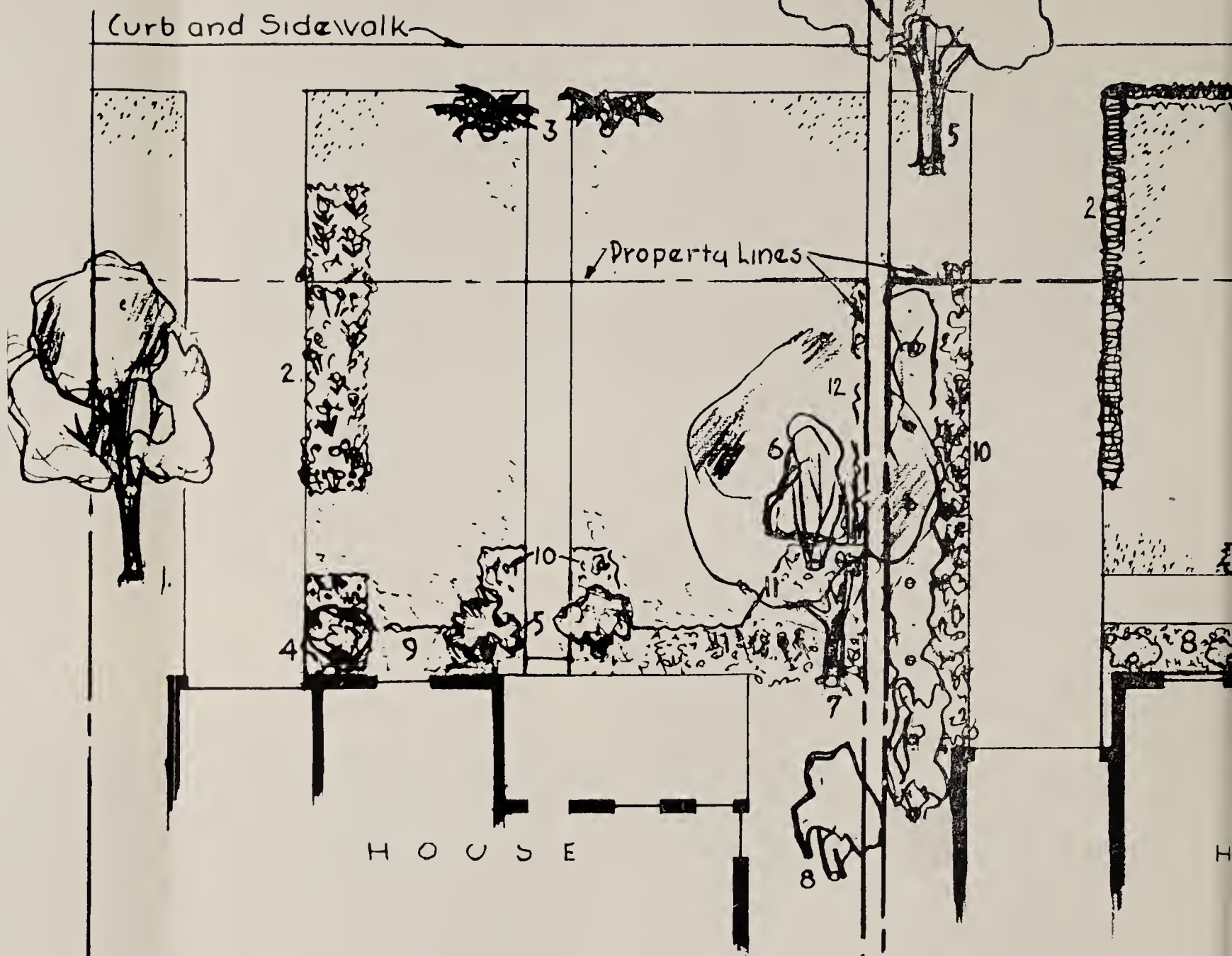
Privet Hedge.

Paper birch, Poplar or Pagoda tree.



Planting of Poppies in the sun.





LEGEND:

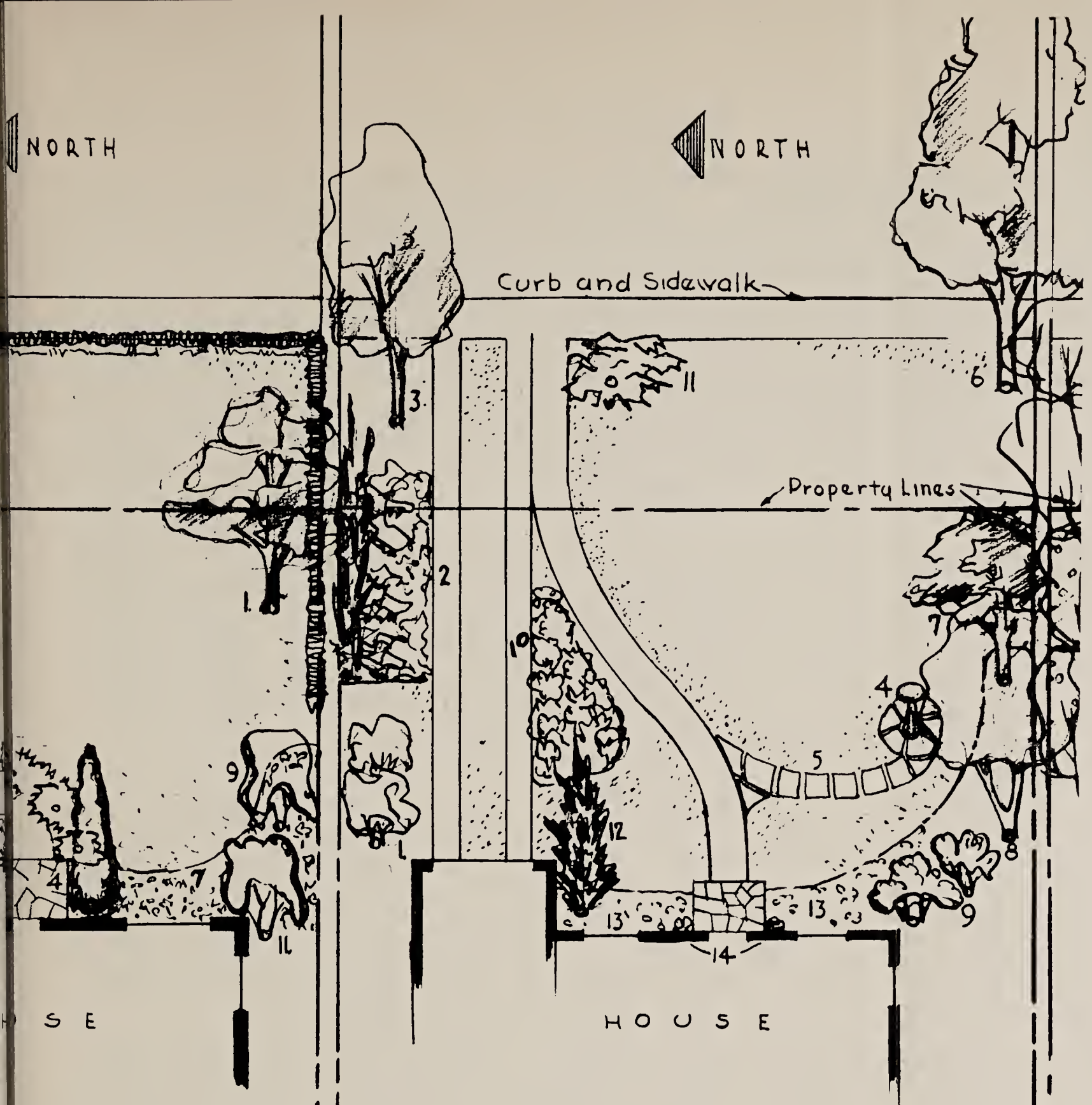
- 1 1 Mountain Ash (*Sorbus aucuparia*)
- 2 Floribunda Roses - 10 Elsie Poulsen and 10 Baby Chateau, mixed.
- 3 2 Tamarisk creeping Junipers
- 4 1 Snowball
- 5 2 Mockorange dwarf variety
- 6 1 Newport Plum
- 7 1 Russian Olive
- 8 1 Lilac Monge
- 9 10 Lapham Phlox, 25 Petunias
- 10 20 Cushion Mums
- 11 10 Phlox Rynstroom, white
- 12 Shade Plants (adjoining lot has lilacs)
- 13 On house - 2 Engleman Woodbine

PLAN V - "ROSES"

LEGEND:

- 1 1 Red Flowering
- 2 120 Lodense Pri
- 3 4 Tamarix Jun
- 4 1 Upright Juni
- 5 1 American Linc
- 6 7 Lilacs - 2 L. Sp
- 7 Phlox - 2 Charle
- 2 Mrs. Jenkin
- 10 Mixed Cushio
- 20 Darwin Tulips
- 20 Annuals - D
- 8 2 Japanese Be
- 9 1 Beautybush
- 10 20 Floribunda R
- 20 "
- 11 1 Wayfaring Bu

PLAN VI -



V. LANDSCAPE PLANS FOR FRONT YARDS

The three plans reproduced on the preceding pages were prepared by S. R. DeBoer, Landscape Architect, for the use of the Colorado Forestry and Horticulture Association. We have selected these three plans as typical of the problem of suitably landscaping a front yard and will explain the reason for some of the materials selected and for their arrangement.

PLAN V

Plan V features "Floribunda Roses." It is arranged to ornament a small home of average size and location. The two trees used are both of comparatively small size so that they will not become overgrown soon. The especially attractive feature of the Mountainash is its bright orange berries held on the tree throughout fall and winter. The Russianolive is especially appropriate in this western country because it will grow in rather alkaline soil and the gray foliage just fits in this climate. Contrasting with the green and gray foliage of the trees is the red leaves of the New-port Plum. This will become a rather tall shrub or small tree with age. The two Tamarisk Junipers will carry this colored foliage effect over winter for they hold their dark green color well throughout the year. They are naturally mound-shaped and slow growing, especially adapted to the location shown. The Snowball and Lilac shown next balance well in size but give a variation in character and blooming time. The June blooming Snowball with its round white heads of bloom was a familiar sight in all old gardens, while the French hybrid Lilac variety Monge is of a rich reddish purple color, and usually blooms gloriously through May. The two mockorange shrubs by the front entrance are the dwarf kind which will

give the charm — fragrance, if you wish—of this old-fashioned shrub and yet stay in scale with the rest of the planting.

Phlox, Mums, Petunias, and a variety of shade plants give a succession of bloom all season. The Woodbine on the house, unfortunately, is about the only clinging vine which will grow on the south of a building here. On the north side the more refined Boston or English Ivy might be grown. Floribunda roses, which abound in various sizes and colors, and are usually much freer flowering and more hardy than tea roses, will bloom May through September, if given reasonable care, and will help give the needed character to the planting.

PLAN VI

This plan is of a more formal design, featuring straight lines, emphasized by "Hedges." It will probably require more maintenance than the preceding plan, but will give a neat, finished appearance for those willing to give a little extra care to their landscape plantings.

Again we have two trees to give some appropriate shade and frame the house. They are placed where they do not obstruct the view either looking in or looking out. The Hopa Crabapple will furnish very attractive rose-red blooms in spring, will have a rather neat shape all season and will never become very large. The American Linden suggested will, in time, become large, but it is one of our neatest trees, and once established, will continue to become more and more beautiful with age. The large background of screen shrubs include seven French Hybrid Lilacs arranged in a formal row where they are needed most. The other large shrubs are a Beauty Bush and a Wayfaring Bush. The latter is one of our

best large shrubs because of its attractive leaves, bloom and fruit. The leaves are thick, gray and deeply ridged, and they furnish a beautiful background for the flat head of small white flowers and the ensuing berries which ripen in concentric circles from green through yellow, red and black. The small shrubs are the two low Japanese Barberries and 40 Floribunda roses.

This plan will have added winter effect from the use of the familiar upright Juniper and the four Tamarisk Junipers. Phlox, Mums, Zinnias and Tulips carry the color needed throughout the season. The hedge is designed to be kept trimmed low, and so is made of the adaptable, slow-growing Lodense Privet. This shrub holds its foliage until Christmas time, and stands shearing very well.

The interesting entrance of flagstone is in keeping with the slightly formal tone of the whole planting.

PLAN VII

This plan features the "Birdbath." It is slightly more elaborate than the others, but it is not overdone. As with the last plan the walk is designed to leave a pleasant unbroken area and yet be convenient to use. This plan demonstrates that we may have more features of interest in our front yards.

Again two trees are called for. There is little choice in the case of a fifty foot lot, for more would be too many and less would leave something to be desired. The Linden and Mountain ash we have commented on. The Pagoda Tree is not so well known, is difficult to establish, but makes a rather nice and unusual small tree. It generally grows in a spreading umbrella shape, and in the summer has clusters of small yellow pea-like flowers followed by interesting little pods.

Here the winter effect is carried out with the use of one upright Cana-

ert Juniper and two Pfitzer Junipers.

This planting will appear denser than the others because of the use of two small-scale trees; the Downy Hawthorn and Bechtel's Crab. Crab and Hawthorn trees, of all varieties, should be used more in this region, for they give good effects in bloom and fruit and will never become too large. Downy Hawthorne is one of the largest and most tree-like of all the Hawthornes. It is covered with small white blooms in spring, and in fall the rather large red fruits hang on for several months. Bechtel Crab is a mass of large double light-pink flowers in the spring and is really a magnificently beautiful tree when in bloom. The flowers, being double, do not produce fruit, but they do wither and hang on the trees after the bloom. There are many attractive single flowering crabs in a variety of colors.

Smaller or medium sized shrubs include the old familiar Bridal Wreath or VanHoutte Spirea. It may have been overplanted in the past but that was because it was a good all around shrub, and it still is. Two Japanese or Flowering Quince help to frame the corner of the building. They will brighten the early spring with their bright red bloom. The bed of Potentilla Gold Drop will be a mass of small yellow flowers all summer.

The summer bloom is provided for with a bed of mixed color Verbenias. Two Jackman Purple Clematis on the trellises by the door will give a brilliant flash of color in summer. Delphinium, Hydrangea, Tulips and Narcissi extend the season of bright bloom. The Hydrangea here usually kills back to the ground each winter but, in a protected place, will return again and give a nice display of flowers in fall.

Again the restrained use of flagstone and a birdbath adds a finishing touch of interest.

ROSE NOTES

By VELLA HOOD CONRAD

THE rose is the world's favorite flower. Many of you have asked me for a list of my ten favorites. You could ask ten individual rose growers the same question and get ten different answers.

"Modern Roses No. 3" lists by name over 5000 roses. You'd think you could find any rose you could possibly want, fulfilling all the requirements. Our preferences in roses are as individual as we are. You may want roses for size; another wants color, others want fragrance and particular habits of growth. Each year many new roses appear. Thousands of dollars are spent hybridizing and trying for the perfect rose.

The American Rose Society fairly and impartially lists and rates roses after they have been tested over different sections of the country. Under their rating system a score of 10 would be a perfect rose. A rose must have many qualities to earn its rating. A rose above 9 is "outstanding," and above 8 is "excellent." For a beginner, I would recommend that you make your choice of colors and choose the roses, suitable to this climate, with the higher ratings. Failure is often discouraging to beginners, and that is why I say this. Later you can, and no doubt will be trying many of the roses—taking good and bad in your stride and enjoying every bit of the work you are doing.

Peace—a yellow blend introduced in 1946—has become world famous, and is so outstanding that it is usually in a class alone at shows. It outgrows and outperforms any rose in my garden. The large buds unfold into large flowers that have measured seven inches across, and I have had as many as 35 buds and blooms on one bush. The color is yellow, tinged

with pink. It changes from day to day, and no two Peace roses are ever alike. The foliage is good and the plant hardy, but it is not fragrant.

Crimson Glory—red—9.5. A dark red, very velvety and wonderfully fragrant. The bush is vigorous but spreading.

Charlotte Armstrong—pink-red—9.0. A shapely bud and a big pink-red flower. I love it.

Etoile de Holland—red—8.9. Fragrant velvety crimson bloom, many people consider it the finest red rose. An old one, but tried and tested.

Nocturne—red—8.3. New Yorker—red—8.2. Both of these are good red roses. Heart's Desire—red—7.5 and Mirandy—red—7.5 are both lovely roses in my garden. I like Heart's Desire for its bud and Mirandy for fragrance. Mirandy blues in our intense sun and Heart's Desire has a tendency toward a weak neck. Tallyho—light red—8.3—always draws attention, and I saw many beautiful specimens this summer past.

In the yellow roses, Eclipse leads with an 8.5 rating. It has a beautiful bud. Yellow roses are the most disappointing of all to me in this area. But since it is a favorite color, I keep trying them. Lowell Thomas—7.3 and Madame Pierre DuPont 7.8 are both worthy of a place in my garden.

Dainty Bess—pink—8.7. A single rose, but the best true pink.

Picture—8.4, Show Girl—8.2, and First Love—8.0. All three of these are good pink roses. K. T. Marshall with a lower rating of 7.6 has been outstanding in my garden. The blends by rating are Peace 9.4, Mme. Henri Guillot 8.9, Good News 8.4, Mrs. Sam McGredy 8.3, President Hoover 8.2 and Sutters Gold 8.1. To this list I could add Countess Vandal, 8.0,

and about five others that are below the 8.0 rating but do exceptionally well here.

Pedrables—white—8.0. Rex Anderson — white — 7.1. Both are a creamy white and usually exhibition roses. White roses are the most difficult to breed. Frau Karl Druschki, a white hybrid "perpetual," is worthy of its space. It is not everblooming as hybrid teas are, but so lovely when it does bloom that you feel well rewarded.

Floribundas, climbers, and miniatures all have a place, too. I will touch on this at a future date. I know you can readily understand now why it is so difficult for me to name ten roses for the best results. You can rely on the ratings of the American Rose Society. We have many good and interesting books on roses in our Helen Fowler Library. They are here for you to use, and we are always happy to help you with your rose problems.

THE NEW 1953 ALL-AMERICA SELECTIONS

ROYAL CARPET alyssum and Comanche petunia win the only awards and recommendations of All-America Selections for 1953 introduction.

With a silver and bronze medal award, respectively, these are the outstanding new flowers of the year. Along with dozens of other bright prospects from around the world they have been thoroughly tested and compared with closest similar kinds during the past two years of trials. Leading flower judges have grown and compared the new entries with the best varieties in commerce. There are eighteen of these All-America flower trial grounds, representing all climatic zones and geographic sections of the United States and southern Canada.

Royal Carpet alyssum is the first new variety in the alyssum family for a dozen years, since Violet Gem was introduced as a distinct improvement over Lilac Gem. The white colored variety of this same six-inch height is Little Gem.

Royal Carpet is the color of the richest, deepest Violet Gem and flattened out to only two inches tall by ten or twelve inches across. Covered almost completely with a sheet of vio-

let or royal purple bloom, it seems to have no foliage. It makes a richer and more attractive blanket of refreshing color. Carpet of Snow is the white flowered counterpart.

Use this alyssum in sunny positions for ground cover, lowest edging, in rocks and walls. It certainly creates attention and admiration, and it is about the easiest seed to grow.

Comanche petunia is absolutely true to type and color, the reddest and richest petunia so far created. Since petunias are the most widely and popular and satisfactory planted flowers of them all, Comanche has added significance and value. It is always in bloom, from early spring until killing frosts, and may be carried over the winter in the lower south or indoors.

Deeper and richer scarlet red than Fire Chief, the only other red petunia, it also has somewhat larger flowers and many more of them. Comanche plants are larger, bushier and stronger. They stand erect over a long blooming season, making a striking bedding display. Cutflowers are long lasting and very useful for arrangements.

Comanche is a first generation hybrid, true, uniform and with extra hybrid vigor for beds, pots or boxes.

SOME JANUARY ACTIVITIES FOR GARDENERS

By MORAS L. SHUBERT

ALTHOUGH midwinter doesn't seem like a good time to think about gardening in Colorado, there are many things that people who are interested in gardens should be doing. Let's list a few:

1. Keep in practice by growing exhibit-quality house plants.
2. Towards the end of January, start geranium cuttings for bedding plants which will be already in bloom at June planting.
3. Inspect tender bulbs, corms, and roots that are stored for spring planting to be sure that they are at the right temperature and moisture for good keeping.
4. Study the new seed catalogues and make orders for any seed needed in spring planting.
5. Work on your garden plans for the coming season and make lists of plants needed from your nurseryman, and get your orders in early.
6. Make a regular routine of studying and reviewing the basic principles of gardening, so that you will better understand each activity.

There are many other things that should be done, such as check the garden equipment, clean and oil working parts, but I would like to further emphasize the importance of item 6 listed above.

Many of us get to thinking that our experience and study through the years provides us with all of the training we need, and that there is no call for a planned program of study. But when we stop to consider all of the basic principles, objectives, and techniques involved in gardening, and when we read of the new discoveries

that are of such great importance to us, it becomes apparent that we have to study in order to keep up to date.

Let's look over the fundamental principles upon which good plant culture is based to see whether or not we understand each of them as thoroughly as we should.

The Basic Principles of Horticulture:

1. Plant growth and development—the structure and physiology of plants from the practical standpoint.
2. Propagation—methods of starting new plants.
3. Planting and transplanting methods—getting plants into the site where they are to grow.
4. Training—an often-neglected activity, especially important in the care of woody perennials.
5. Pruning—the removal of parts in the *right* amount and in the *right* manner.
6. Soil management—proper care and improvement of soils.
7. Plant and environment relationships—effects and controls.
8. Pest and disease control.
9. Garden design.
10. Horticultural plants—study of species and varieties.
11. Harvest of products—flowers, fruits, vegetables, etc.

Anyone who is convinced that he has a thorough knowledge of each of these important principles is either a real expert, or he is fooling himself. But assuming that some of us feel we can profit by a little more study along some of these lines, let's see where we can get further information during this month of January. We can make more use of the ex-

cellent Helen Fowler Library in HORTICULTURE HOUSE, or we can try other libraries in the vicinity. There are whole books covering each of the principles outlined above. We can compile information in a classified scrapbook, filing clippings under headings such as those listed. Here we have to be cautious not to rely upon newspaper and magazine articles that do not apply to our climate. We can arrange group meetings with people especially trained in these fields. We can enroll in adult education classes at several of our colleges and universities.

But let's each make better use of our "winter gardening" times and cultivate a few new ideas, and perhaps even weed out a few old ones.

A course in "Plant Culture for Home Gardeners" will be taught by Dr. Moras Shubert in connection with Denver University's Community College. The course will begin on January 7, 1953, and will last through the winter and spring quarters. It is

open to all interested people. If you are interested in taking it for credit, two hours per quarter, the fee is \$22 per quarter; but for non-credit students the fee is \$15 per quarter. The class will meet on Wednesday evenings from 8:00 to 10:00 P.M. in the Business Administration building, room 265, on the Civic Center Campus. Those who wish to register for the non-credit basis need not go through the formal registration procedure but may register at the first meeting of the class on January 7.

I feel oppressed when I think about the void that surrounds many people when the rattley-bang of home and job is not hammering at them. Maybe we are each of us surrounded by such a void, but the fortunate ones have been able to toss cables and bridges out to other people, and to events and mountains, rivers and pasque flowers. For them the void is a precious house to be defended sometimes by drawing up the bridges.

JOY COOMBS in Iceland.

ANNUAL MEETING

Attention!

Members of the Colorado Forestry and Horticulture Association!

OUR ANNUAL DINNER-MEETING

will be held on

THURSDAY, JANUARY 29th

THE PLACE—The American Association of University Women Clubhouse at 1400 Josephine Street.

THE TIME—6:30 P.M.

THE TICKETS—Now on sale at Horticulture House; \$2.50, including tax and tip. Get yours early.

You'll Have a Good Time, Good Dinner, Good Company!

BRYOBIA PRAETIOSA—THE RED INVASION

By HERBERT GUNDELL

ONE of the smallest, but most annoying garden and home pests to cross our path each year is the clover mite. Harmless as it is, it causes more consternation and bad dreams to homeowners than most other insects and spiders.

The clover mite really is not an insect. It has eight legs and is therefore classified as a spider. It feeds during the summer and fall on almost any green forage and was given the name clover mite because it is most often found in mixed lawns feeding on clover leaves. One should not, however, try to eliminate all clover plants in the lawn to get rid of clover mites, because they will then feed on grass or any other weed in the lawn.

The clover mite is generally regarded as a freak with respect to control and eradication. It has a hard chitinous layer on the outside of its body, which makes it resistant to most contact poisons that can be used safely in the home. It also has sucking mouth parts which makes it dif-

ficult to control with stomach poisons.

The chemical industry has been working diligently, and without much success, to find a chemical that could be safely used in the home and would have a sufficiently long lasting effect to fight this pest.

Relatively good results have been obtained with the use of sulphur dust applied to window sills, door sills, and places near the foundation of the home where the clover mites gain entrance.

Inside the home the mites can also be controlled to some extent with sulphur dust, and they can be picked up very easily with the vacuum cleaner.

It has been noticed that clover mites will not often cross soil that is kept moist throughout the winter months. This should be worth trying, at any rate.

Remember also that clover mites do not feed in the winter time and are merely in search of a warm place to winter. They do not bite and are not poisonous.

SHADE TREE CONFERENCE IN DENVER

FEBRUARY 11-12-13, 1953

THE Midwestern Chapter of the National Shade Tree Conference will hold its annual meeting in Denver this year. Its headquarters will be in the Cosmopolitan Hotel.

This is the first time that this conference has been held so far west and we feel proud to have them here and to be able to show them some of our trees and explain to them how our horticulture is different.

The bulk of the membership in this organization is in the lake states, but the Colorado members now num-

ber 45. Interest in this subject is rapidly increasing and we may learn much of modern approved practices for tree care from these men who have been taking care of trees for many years.

Arrangement can be made for any one interested in trees and their care to attend at least some of these sessions. Call Horticulture House for information.

The valuable and interesting program will include these speakers: Dr. A. C. Hildreth, Director of the Chey-

enne Horticultural Field Station, who will speak on "Climatic Factors Affecting Shade Tree Growth in the Rocky Mountain Area;" Robert More, local authority on evergreens, telling of "Growing Evergreens in Colorado;" M. Walter Pesman, local landscape architect, on "Trees in Relation to Your Home;" Thomas L. Martin of Provo, Utah, on "Soil and

the Microbe;" Dr. George M. List of Colorado A. & M. College on "Some Insect Pests of the Rocky Mountain Region;" Mrs. Temperance O. Gup-till of Sudbury, Mass., on "The Family vs. Shade Trees," and others. Carl Fenner, City Forester of Lansing, Michigan, will also conduct a special session for parks and tree men.

GETTING THE MOST FROM CHRISTMAS PLANTS

By THE MASTER GARDENER

THERE is such a radical change in growing conditions when a Christmas gift plant is brought from the florist's to an average home that, unless you take the same pains, it is very difficult to keep it in good condition much after the New Year. With care, however, the life of these plants can be extended for several weeks beyond the holidays.

Follow these tips for preserving your Christmas plants:

Cyclamen

Keep the plant in the coolest part of the home with a temperature of not over 60° at night. Use plenty of water during the period and never allow it to wilt. An even more desirable temperature for the cyclamen is a range of from 40 to 50° such as you may have in an enclosed porch.

Poinsettias

These require a warm and even temperature. Keep poinsettias well supplied with water but not continually soaked. Changes in temperatures, drafts or dryness will result in loss of foliage almost immediately. After the leaves fade, set the plants in the cellar until spring—when they

can be cut back to 4 inches and set out in the garden. Although they will not bloom in the garden, they do produce attractive foliage and are a kind of curiosity.

Azaleas

The cooler they are kept in the home, the longer they last. They should have good light and plenty of water.

Jerusalem Cherries

Keep fairly cool, water moderately and set them in a window where they receive all sunlight possible.

Begonia

Prefers moist atmosphere, moderate watering and some sunlight each day.

Cineraria

Requires abundance of water with a cool, humid atmosphere.

Calceolaria

These exotic plants are very short-lived under average home conditions. Keep them as cool as possible, on the dry side, and give them plenty of light.

GARDEN ON POSTAGE STAMPS

By KATHRYN KALMBACH

MILDRED STEELE'S charming article in last month's Green Thumb, "Postage Stamp Garden," has inspired me to tell you about my garden on postage stamps.

In 1945 an article appeared in *Gardeners' Chronicle of America*, entitled "Plants on Stamps." This article, by Charles H. Curtis, Editor of England's *Gardeners' Chronicle*, suggested a hobby to me which has grown increasingly interesting with the years. Collecting plants on stamps is a fairly common hobby, but the writer claims, along with Mr. Curtis, the distinction of arranging her collection for botanical, as well as philatelic interest. My stamps are arranged by plant families, rather than by geographical limits. Thus under Liliaceae, or Lily family, may be seen stamps from Egypt, Germany, Holland, Japan, Switzerland and the United States.

The picture accompanying this article shows a few stamps with plants belonging to the Buttercup family. Here our Colorado Columbine appears in the distinguished company of relatives from Austria, Egypt, Finland, Germany, Hungary, Holland, New Zealand, and Switzerland. *Anemone coronaria* from Egypt is the "lily of the field" of Bible fame. *Ranunculus lyalli* from New Zealand is a rare and beautiful member of the family.

The Joshua tree (Liliaceae) on the U. S. stamp which commemorates the Fort Bliss centennial, and the Columbine on the Colorado Statehood stamp pictured, are but two from our own country which appear throughout my album under various plant families. To mention a few, there are several pages devoted to Pinaceae, Gramineae, Fagaceae, Caryophyllaceae, Magnoliaceae, Lauraceae, Papaveraceae, Rutaceae, Oleaceae, Acanthaceae, Solanaceae, Leguminosae, and Palmaceae.

Some of the plant families have been pictured on many stamps by many countries. Thus the grass family, Gramineae, which includes grains, sugar cane, rice, bamboo, corn, etc., is pictured on stamps by countries in both the new and old worlds. The palm, orchid, and composite family members are found on stamps around the world. Citrus fruits, bananas, pineapples, grapes, coffee, tea, cotton and rubber, have been pictured frequently.

But perhaps the greatest thrill to the collector is finding a plant stamp of a rare genus, or of a family of limited world distribution. A thrill to this collector was finding my favorite plant, cotton grass, pictured on a stamp from Belgium (see cut). A few rare representatives of the plant world in my collection are: the Api (pronounced "Ah-pay") which is related to Taro, and is a member of Araceae; the beautiful *Vellozia* (Haemodoraceae); *Protea* on a Suid-Africa stamp (Proteaceae); and *Aristolochia* from the Belgian Congo, related to our Dutchman's pipe; *Mahogany* logs (Meliaceae) from Honduras; rare *Ocha* (Ochnaceae) the only genus in this family mentioned by Bailey; and the Red Lauau tree

Cyperaceae



Ranunculaceae



A. coronaria

A. lyallii

A page from Mrs. Kalmbach's Garden Stamp Album.

(*Shorea negrosensis*) a member of Dipterocarpaceae.

Tracking down the plants found on stamps provides the amateur botanist with many hours of fun. A lovely stamp from Egypt pictured a flowering branch, and was issued to commemorate an International Congress on leprosy. Here Bailey's *Cyclopedia of Horticulture* failed me, but my *Treasure of Botany*, edited by John Lindley and Thomas Moore, and published in London in 1889, finally yielded the name *Hydnocarpus* of the family *Pangiaceae*. When the description of this plant told that the seeds yielded an oil used in the treatment of leprosy, it was quite apparent why it was chosen for this stamp.

If you like arm chair gardening,

or travel, or exploration, may I recommend my hobby? Do you think you know geography? If so, see if you can put your finger on the globe for such out of the way places as Aitutaki, Bahrain, Heligoland, Kuwait, Trengganu, Maroc, or Funchal. But the world is yours, on stamps, as you turn the pages of your *Plant Family Album* and view tree ferns in New Zealand, Palms in Nyasaland, Sisal plants in Mocambique, *Sisyrinchium* in Bermuda, Bananas in Jamaica, Orchids in Colombia, Grapes in Brazil, Yerba Mate in Paraguay, Cacao in Ecuador, *Poinsettia* in Cuba, Cactus in Mexico, and back home to see corn in Iowa, or rice and tobacco in the South. What a journey! But these are only a few stops on my world tour around my garden on postage stamps!

ORCHIDS AS A HOBBY!

By MRS. JUDITH KING

WHETHER or not you have ever been interested in horticulture before, you will find the growing of orchids a delightful hobby . . . some say the ultimate hobby! . . . filled with pleasure, satisfaction and stimulating recreation. This is not only because of the unusual beauty of the flowers, the fascination of their myriad forms and breath-taking colors, but because orchids offer unsurpassed interest for observation and study, due to their highly specialized structures and remarkable adaptation to their environment and to the insect world. Orchid growing is a hobby that engages not only the mind, but equally occupies the hands, providing an absorbing activity which is healthful and truly recreative to mind and body.

Many who might easily take up orchid culture have deterred from the attempt because of the mistaken idea

that their culture is difficult. While it is true that one must learn their requirements . . . as is true of any gardening pursuit or most hobbies . . . yet this is not difficult, as is evidenced by the thousands now enthusiastically growing orchids in every corner of the globe under conditions that vary from subtropical to the frigid climate of Alaska and Iceland.

Orchids, like other plants, need light, air, moisture, heat and food; they differ, however, from other plants in their quantitative demands of these elements.

We in the Rocky Mountain area must not conform to a system and set of rules compiled by growers in Florida, parts of California and other orchidaceous localities of the world, but accept local conditions and supply the deficiencies as required. In other words, the grower must adapt himself to the whims and demands

of the plants and not vice versa. Is this any different or more difficult than any other type of horticultural pursuit?

While orchid growing is generally thought of as a form of "greenhouse gardening," it is not at all necessary for the beginning hobbyist to invest in expensive equipment. Much interest and satisfaction can be derived by growing orchids indoors in a glass case or "orchidarium" which can be built at home with little expenditure of money and effort. Such orchidariums may be purchased at moderate cost. It is possible to grow many kinds of tropical orchids in a conservatory or a sun porch, or even a well-planned window garden. Of course a small greenhouse attached to the home or otherwise, affords better conditions for the successful growth of a much wider range of orchid varieties. The cost is small in comparison to the satisfaction received, and most hobbyists eventually build such a structure.

The beginning orchid hobbyist is offered an unlimited selection of plants from which to choose. The orchid family is large and varied . . . containing an estimated 15,000 different kinds in nature.

Out of this treasure chest the orchid grower can select plants to meet his fancy, his conditions and his pocketbook. The average price of good orchid hybrids comes well within the means of the moderate income hobbyist and there is a very large number of beautiful species which are quite inexpensive.

Mechanically minded persons will find that orchid growing can be a "gadget" hobby, with chance for ceaseless application of ingenuity in developing apparatus, equipment and techniques of their own. And for those who are adept with the sketch pad, paint brush or camera, there is

no better subject than an orchid plant of their own in bloom.

Perhaps the most enriching aspect of all is the many interesting people with whom one forms friendships, for orchids appeal especially to people with discriminating taste and fine sensibilities. Visiting with others who are growing orchids constitutes one of the pleasantest things connected with their culture.

The basic information on culture is readily obtained from the many books, periodicals and pamphlets now available. The American Orchid Society and more than forty affiliated societies are a constant source of advice. Particularly valuable in aiding the novice is the American Orchid Society Bulletin, published monthly with 64 to 72 fact-filled, illustrated pages, also The Orchid Digest magazine, a publication devoted to the fascinating culture of growing orchids.



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Mrs. Ernest R. Harris, 2325 Birch St., Denver

Mrs. A. W. Monlux, 1685 Quay St., Lakewood

The Denver Orchid Society will meet at Horticulture House, 8-10 P.M., Thurs., Jan. 8. This will be the first meeting with the newly-elected officers. Anyone interested in orchid culture is welcome.

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DO YOU KNOW THE CHARM OF THE DESERT

By HELEN D. STANLEY

HUGH and Anita Wheeler, better known as "Flowers by Maurice" out on East Colfax, departed from the conventional and recently did a completely charming and unusual window display which they happily called "Arizona Highways."

Upon a map of Arizona formed with sand were placed a number of miniature gardens depicting a highway scene of some spot strangely familiar to anyone who has travelled across the Baby State. The gardens were in glazed terra-cotta pots of various sizes and were created in a three dimensional primitive with colorful and jagged rocks for mountain

backgrounds, a tiny winding road definitely going somewhere interesting through the stately canyons and among the bristling cactus, all made to scale and set off with an Indian all of one inch tall plodding along toward the reservation or selling his wares by the roadside. Minute signs stuck on colored toothpicks pointed the way to The Little Grand Canyon or the Apache Reservation, all different and flavored with the fascination of one of the country's loveliest of the 48.

The window was a refreshing sight for the wayfarer out East Colfax way.

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JANUARY GARDENING

MOST of our gardening activities this month will be indoors. We should check the house plants frequently for indications of the start of insect pests. Mealy bug on Coleus, Sultana and Cactus is common as is scale on the Ivy and Amaryllis. Also watch for thrip on the Amaryllis and Gloxinia, and for spidermites on many things. All of these pests can be largely controlled by regular washing of the leaves of these plants. Use warm soapy water and a soft rag, carefully holding each leaf in the hand while washing. Then rinse in clear water and dry carefully out of the sun.

A monthly **LIGHT** feeding of the house plants will allow them to grow and bloom longer and better. Some of the liquid fertilizers are well adapted to this use. Check the requirements of each plant for sunlight, heat, water and humidity in the air. Some plants like Christmas Cactus, Amaryllis and Gloxinia must have regular rest periods if they are to bloom the second time. Most of the Christmas plants had better be treated as temporary things—enjoyed to the fullest when they are in their prime and consigned to the alley when they are done.

While you are fidgeting around these stormy, cold days, look over the stored bulbs and check for excessive heat, cold, moisture or dryness. Dahlia bulbs are especially particular. Most bulbs prefer a temperature around 40 and an atmosphere neither very dry or wet.

After heavy snowfall check the evergreens for damage caused by snow sticking on them. In cold weather knock this snow off carefully, as the twigs are brittle when frozen and more damage may be done by knocking snow off than by leaving it on. Low evergreens under eaves may need some extra protection to prevent breakage from great masses of snow sliding off the roof.

When the ground is frozen but the sun is shining the good gardener may keep his thumb green by doing some of the necessary trimming of trees and shrubs. Fruit trees and grapes may be pruned now.

There are usually several weeks during winter when the sun is shining and the temperature suitable for many construction jobs. Flagstone walks, platforms, walls and special features may be constructed. Rock gardens, pools, fences and shelters can be designed and built.

The chief garden job, however, at this time of year is planning and studying. It is so much fun to read up on the life histories of some of the bugs that damaged the garden last summer, to learn more of the new insecticides, to read of the origin of some of our principles of landscape design, to study the correct spelling and pronunciation of plant names, to learn about the new roses and to investigate the possibilities of new garden machinery and tools.

If you are to have a good garden in June it should be visualized and planned in January.



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The Green Thumb

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THE COLORADO FORESTRY AND HORTICULTURE ASSOCIATION

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Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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Editor.....George W. Kelly

SCHEDULE

February 1, Sunday. Herman Gulch, about four miles from Loveland Pass ski area. Park cars on scooped out parking by request of Highway Dept. Enter Herman Gulch and snowshoe toward Hager Mountain.
February 8, Sunday. Rampart Range Road. Park cars at Indian Creek Ranger Station and walk two or three miles up an easy grade towards Devil's Head. Walking distance depends upon snow conditions. Leave H. H. Parking Lot 8 A. M. Snowshoes and skiis.
February 15, Sunday. Leave H. H. at 8 A.M. Urad Mine Gulch and up Woods Creek toward Hassell Lake. Park cars at Urad Mine. Road used by miners, usually open

and snow good for snowshoeing. Snowshoes or skiis.
February 21-22, Saturday and Sunday. If enough interest is shown an overnight cabin trip will be arranged. Location depending on snow conditions. Call for details and to offer suggestions.
February 26, Thursday, 8 P.M., at Horticulture House. Lecture on "Starting Plants Indoors" by Mr. Willard Coleman.
March 1, Sunday. Silver Creek Ghost Town. Probably not too good for snowshoes on first half; better up in basin where Silver Creek is. Leave H. H. at 8:30 A.M.
For information about Sunday trips call Mrs. Timm at PEarl 5565 or the Horticulture House at TAbor 3410.

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SHADE TREE CONFERENCE

FOLLOWING is the program of the Midwestern Section of the National Shade Tree Conference being held in the Cosmopolitan Hotel, February 11 through 13. Here can be heard some of the outstanding authorities of this and other regions. It is a rare privilege to have these speakers assembled in our community. Anyone interested in Shade Trees or Horticulture in general will find much of interest here. All are invited. Registration for all sessions will be \$3.50 and single sessions \$1.50.

Program

Wednesday, February 11, 1953

- 9:00-11:00 Registration
 11:00-11:15 Welcome by Vance Shield
 11:15-12:00 Trees in Relation to Your Home, M. Walter Pesman

Lunch

- Session Chairman, SCOTT WILMORE
 1:30- 2:30 How Rocky Mountain Horticulture Is Different, George W. Kelly (slides)
 2:30- 3:30 The Family vs. Shade Trees, Mrs. Temperance O. Guptill
 3:30- 4:30 Some Insect Pests of the Rocky Mountain Region, George M. List
 7:00- 8:00 Meeting of Executive Committee

Thursday, February 12, 1953

- Session Chairman, ALFRED F. CARLSTROM
 9:00-10:00 Sap-Sucking Insect Pests of Ornamentals, Ernie Herrbach
 10:00-11:00 Growing Evergreens in the Rocky Mountain Area, Robert E. More
 11:00-12:00 Stump the Plant Experts, Panel Discussion, Moderator, Noel B. Wysong

Special Ladies Program

- 10:00-11:00 Colorado Wonderland, George W. Kelly (Slides)

Thursday Afternoon

Lunch

- Session Chairman, EARL J. SINNAMON
 1:30- 2:30 Soil and the Microbe, Thomas L. Martin
 2:30- 3:15 Shade Tree Diseases, Carl E. Seliskar
 3:15- 4:30 Business Session, Vance Shield, Presiding
 7:00 Banquet, Entertainment, Dancing; Toastmaster, Lloyd Beal

Special Ladies Program

- 1:30- 4:00 Drive to Red Rocks and Evergreen (weather permitting)

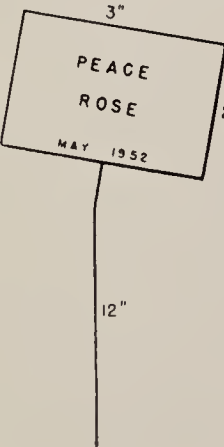
Friday, February 13, 1953

- Session Chairman, Frank Hanbury
 9:30-10:30 Climatic Factors Affecting Shade Tree Growth, A. C. Hildreth
 10:30-11:30 Diagnosing Tree Ailments, J. C. Carter
 11:30-12:15 Plant Clinic, John W. Swingle, Discussion Leader

Lunch

- Session Chairman, WILLARD RUSSELL
 1:30- 3:00 Standardizing Methods of Tree Care in a Modern City, Carl Fenner

Adjournment



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Photo by Bruce Korfage.

MY GREAT OAK TREE

In a far foreign land there is a great oak tree
And I never can tell what it meaneth to me.

Thither I went in the days long ago
And sat in its shade when the sun was low;
A sadness deep had then carried me down
Where the life-cheer ebbs and the soul-fires drown;
Then the great strong arms and whispering leaves
Bestowed me the faiths of their age-long eves
Till the day-bred fears were winnowed apart
And the peace of the place fell to my heart.

And thrice since then far over the sea
Have I journeyed alone to my old oak tree
And silently sat in its brotherly shade
And I felt no longer alone and afraid;
I was filled with strength of its brawny-ribbed bole
And the leaves slow-whispered their peace in my soul.

If never again I travel the sea
Nor feel once more the still message to me,
Glad will I call where my haven may be
Farewell and farewell to my great oak tree.

—By LIBERTY HYDE BAILEY.

By Permission, from MY GREAT OAK TREE.

TREES—THEIR PLACE IN THE COMPLETE HIGHWAY

By KARL DRESSEL

Professor, Michigan State College

UNFORTUNATELY we do not always have good conditions for trees along many of our roadsides. Many of our roadside tree problems would be solved if we could have wide enough rights of way and the road authorities had strong legal control over the trees. Too often the road right of way is trying to furnish growing space for trees and space for overhead public utility structures both of which must be back far enough from the traveled way so as not to be a traffic hazard. Unfortunately in many cases this restricted area is in reality wide enough for only one of these but in compromise we crowd both in the area. As a result we aggravate the troubles of both the highway authorities and the public utility company. In the end neither is very well satisfied with the highway appearance and the higher maintenance costs. The public utilities are a necessity in our modern living and are demanded by the public. Wide enough rights of way would solve the problem. . . .

In the planting of roadside trees it is difficult to foresee future changes that may take place in conditions on and off the right of way. Trees placed in the wrong place may in future years have to be sacrificed in the name of progress. This means the loss of trees long before they reach economic maturity. Many fine roadside trees are sacrificed each year in road widening, driveway entrances and expansion of public utilities. In the past local pressure and the natural reluctance to destroy a tree has persuaded us to leave trees too close to the pave-

ment which might become dangerous to road traffic. . . .

If trees are to be planted under or near existing overhead utilities there should be an agreement between the road authorities and the involved public utilities companies as to the utility companies' future plans for removal or modification of construction if there will be future serious tree and wire conflicts. If there is apt to be serious tree and wire conflict it can often be reduced by the proper selection of tree species that will best fit the location. Tree species vary greatly in shape, branch spread, growth habits and ultimate height. . . .

Underground utilities should be kept as far from the trees as possible due to danger of leakage and root destruction in construction and future repairs. Many roadside trees could be saved by requiring the utility to tunnel under large roots. Drainage ditches can be tunneled under tree roots and tiled in to save many fine trees. . . .

Serious thought should be given to the removal of roadside trees that have been seriously mutilated in the past and now serve only as a monument to past mistakes. Many of these add nothing to roadside beauty, comfort, or safety. There should be a gradual removal program over a period of years. By removing one here and there over a period of years few people will ever notice their disappearance. . . .

The question of whether to place the tree or the public utility structure on the edge of the right of way has been a debatable question for years. If there were a choice under exist-

ing conditions the treeman would select the location near the property line with the utility structure near the traveled way. In this location the tree would be living under more normal growing conditions with less root restrictions. It would also be less affected by artificial drainage, air currents of traffic and reflected heat from the pavement. There would be less foliage reduction by trimming for road and sight clearance. This would reduce the road authorities maintenance costs. It would reduce the danger hazard of trees falling onto traffic. Low hanging branches would not force traffic out into the center of the pavement causing accidents. In road widening the short-lived more easily replaced public utility structures would be sacrificed. There would be fewer automobile and tree accidents with their resulting publicity. It would be easier for the utilities to inspect their lines and the

road authorities to perform the necessary tree trimming. . . .

The objections to this location are that the utility structures would be more conspicuous and there would be less shade on the road and more shade on the adjoining fields. In some locations the shade and the feeding tree roots in the adjoining fields would be a serious problem to the adjoining property owner but in other it might be a benefit. . . .

With constructive thought today we can eliminate many future roadside tree problems that we face today from former plantings. . . .

Closer study will have to be made of each tree planting location so it will not have to be destroyed by future utility lines, drives, buildings and sidewalks. The better we do this job the fewer older trees will have to be sacrificed each year in the name of improvements.

(Excerpts from paper for Eleventh Short Course on Roadside Development.)

THE FUNDAMENTALS OF PRUNING

By L. C. CHADWICK
Ohio State University

Pruning is a corrective and a maintenance practice . . . It becomes increasingly important to select plants that fit the situation in which they will be used. Don't use shrubs or evergreens that must be continually cut to keep them at the size desired.

Pruning practices to follow with old overgrown shrubs is often a perplexing problem. Three practices can be followed: The most drastic but often the most logical and effective—and no more expensive in the end—is to remove and plant more suitable shrubs. Old, overgrown shrubs can be cut to ground and a few of the new strong shoots selected and pruned to develop the new top. The third practice would be to follow a gradual renewal system wherein a few of the older stems

or shoots are removed each year and a few new ones left to develop. This practice, however should be started before the plant becomes overgrown.

Early corrective pruning of trees in the nursery, and while they are small in landscape plantings, is important. Early corrective pruning makes it possible to make small cuts which will heal quickly and to select proper branches to make a good top. Early corrective pruning will avoid the development of weak crotches and will overcome much of the need for cabling, bracing and cavity work often necessary in old poorly-pruned trees. A good practice is to prune for strength in trees.

(From "Arborist's News," Vol. 17, No. 10, October 1952.)

SHOULD REASON OR EMOTION CONTROL THE USE AND ACCEPTANCE OF ORNAMENTAL AND SHADE TREES?

GEORGE S. STADLER, *Denver City Forester*



UNFORTUNATELY many shade and ornamental trees are failures from the point of view of the original intention. Many become incompatible with our present way of life and serve only as detriments to all concerned.

Man-fabricated structures generally follow an accepted pattern of use and eventual deterioration until finally outmoded and replaced. Trees differ in that they are living things and must continue to grow to exist. Their growth is subjected constantly to the combined, and often opposed, demands of humans and the forces of nature. Each individual tree is an entity unto itself with problems strictly its own.

The complexities of nature are manifold. Combine these with the intricacies of our modern culture and the results are very involved. Many trees grow in situations far different from their original habitat. They will only grow well ordinarily under the sponsorship of timely care. It is necessary to supplement the missing natural requisites. The growth can be adapted in a beneficial manner if directed and modified by reasonable treatment.

Many people develop an eagerness, usually in the spring of the year, to "plant a tree." Too frequently any kind of tree planted anywhere serves to satisfy this urge. After the planting, however, the tree is left to fend for itself with the aid of an occasional watering. In the

Above: Healthy young tree.

Below: 30 years hence unless it has good care.

event that it grows, and chances are in favor of this, very little additional interest is shown in its future development. The emotions are satisfied. Reason is not being applied. This failure to recognize other than emotional reactions in the culture of trees only too frequently results in trouble, expense and eventually no tree.

A real and intelligent consideration of a tree's basic requirements both immediate and future is a must, if benefits from its growth are to be. Trees which serve a definite purpose possess either tangible or intangible values or both. These values should be ample reason for adequate present and future maintenance and protection. Any tree worth having should also be worth the cost and effort required to make it a sound investment.

THE IMPORTANT FIVE PERCENT

(From Shade Tree Digest)

The foliage of a tree has been called, quite aptly, its stomach. For it is in the leaves that all the raw food elements are combined and converted into form suitable for use in the production of wood fibers, flowers, fruit and all the tissues that make up the body of the tree. The water and the minerals from the soil are taken in by the roots, carried upward through the vessels of the trunk, and deposited in the leaves. Through the many small pores, or stomata, of the leaf surfaces, air enters the leaves and there deposits carbon dioxide. Activated by sunlight, the carbon dioxide unites with the water and minerals to form the sugar and starches, from which in turn, are formed the component parts of the tree. This process is called photosynthesis.

The story has been told of an experiment conducted to determine how much of the weight of a tree was derived from the air. A 16-ounce willow tree was planted in a carefully

weighed amount of soil within a large, metal container. The container was covered with a close-fitting lid having an opening in the center through which the tree could grow. Only water was added during the course of the experiment. At the end of five years the tree and the soil were weighed again. The tree weighed 167 pounds; the soil, 2 pounds less than its original weight.

It is generally said that about 95 percent of the body of a tree is made up of elements derived from the air and water, and only about 5 percent from the soil, but that 5 per cent is vital to the tree. It is comprised of nitrogen, phosphorus, potassium, iron, calcium, magnesium, sulfur, manganese, boron, copper, zinc, molybdenum and perhaps other elements used in tree growth. The tree uses a relatively small amount of each of these elements, but if a deficiency of any one develops within the soil, that deficiency is quickly evidenced by a decline in the health of the tree.

In natural woodlands where organic matter is allowed to accumulate, decompose, and pass back into the soil, it is seldom that a nutritional deficiency problem arises since organic material usually contains all elements necessary to plant growth. But for trees that stand in lawns or other areas where there can be no accumulation of leaves, twigs and similar organic matter, it is indeed fortunate that the necessary mineral elements can be supplied to the soil by artificial means. For continued health and vigor in such trees, the importance of regular applications of fertilizer cannot be over-emphasized.

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GREEN TREES IN THE OLD TOWN (Palo Verde in Tucson)

Introduction by M. WALTER PESMAN

DO YOU ever feel like a "Babe in the Woods" in gardening? When all the national garden magazines seem to be in accord on garden practices, and talking about Flowering Dogwoods, Redbuds, Beeches and Hemlocks—do you feel lonesome in our Rocky Mountain Region because those practices and plants don't tally?

So many things seem to be different here, and our exceptional garden spot appears like a little, insignificant island in the traditional sea of accepted American Horticulture. Doesn't it?

In reality it is not such a small island, once you get away from the

Plants used: Greasewood, Desert Broom, Saguaro Cactus, Prickly Pear Cactus, Yucca, and Agave.



accepted idea. Our trouble is that we are apt to travel in an East-and-West direction only. Thus we get to the non-arid Middle West and the rainy East on one side, and to the "misty" West on the other side. Neither region is closely related to ours, as far as garden practices are concerned.

We do know that Wyoming and New Mexico are having similar conditions (only "more so"), but they are less developed horticulturally than we are. And we still feel lonesome.

Then, all at once, we may get a new insight. This "unusual island" of arid conditions, alkaline soil, high altitude, and all that goes with it—is not an island at all, but a continent that stretches out from north to south, all the way from Canada to Mexico.

It is truly a Rocky Mountain region, forming the backbone of all of North America. Within it are differences, to be sure, but they are differences of temperature mainly; withal there are similar conditions that tie together this whole vast garden "empire."

Once we grasp the significance of this gardening similarity in our whole arid region—once we discover that our problems are much more like the problems of Wyoming, New Mexico, Utah, Arizona, Oklahoma, and even a large part of Texas than they are like those of Maine, Massachusetts, and Wisconsin—then we get a new insight into our isolation.

We are not really isolated in our garden practices. We can learn from Arizona, from the Panhandle, from the old systems of the Indians, yes, we might pick up some ideas as far south as Mexico.

When we read about Joe Folkner's *Green Trees in the Old Town* (which is the actual translation of Palo Verde in Tucson), we begin to realize that his main "sermon" is one of adapting gardening to conditions. If Tucson finds it difficult to grow bluegrass—well, a pea-gravel surface can be kept neat, and does not need to be mowed. Even bare soil is not necessarily ugly.

Greasewood, Yucca (soapweed, if you please), Prickly Pear, and other native plants are mighty decorative. To us an Ocotilla, and a Pyracantha may be almost as exotic as an orchid

—to them, in Tucson, they are common.

We still claim Joe Folkner as part of the South Denver Evergreen Nursery organization. The University of Arizona claims him on its teaching staff, and the town of Tucson uses him on the new park development now in progress.

The pictures accompanying his article should make us feel our kinship with Tucson gardens, even though the plant material may seem different from ours. The problems of all the arid, high-altitude Rocky Mountain Region are related: we do not need to feel lonesome or isolated.

GREEN TREES IN THE OLD TOWN (Palo Verde in Tucson)

By JOSEPH S. FOLKNER

The "Old Pueblo" or Tucson as it is officially known is located in the Sonoran desert. Sonora, from which the desert derives its name, is the Mexican state bordering Arizona on the south. The vegetation of the desert is characterized by a number of plant associations. In the Tucson area the vegetation is designated as the palo verde-cacti type which of course are the dominant plants in the association.

There are several species of the palo verde and numerous species of cacti. The most abundant cacti are species of cholla, prickly pear is common and ocotillo, the cane-like plant appearing in the accompanying photos, is found in many locations. The most spectacular of all is the saguaro or giant cactus which towers above the other desert plants. A 63,000 acre forest of these desert giants has been set aside near the city as a National Monument.

Newcomers and old residents alike realize how difficult it is to grow ex-

Further use of native plants. Above: Bermuda lawn, Below: gravel.



otic plants in this area. It can be done but the struggle with a very alkaline soil, high temperatures, low humidity and expensive water has discouraged more than one gardener. The sensible solution is to turn to the native plants, many of which make attractive ornamentals.

Actually, most building sites are generously endowed with these native plants. When preserved during construction operations and added to, a pleasing effect may be achieved.

Tucson has many palo verdes which literally, in Spanish, means green trees. It has a green bark and green needle-like leaves which in turn bear leaflets after the rainy season. It is astonishing and a bit difficult to realize that the rainy season in this area occurs during July and August. The bulk of the year's precipitation occurs during that period.

The palo verde has been widely planted through the joint efforts of nurserymen and townspeople, and an annual festival is held in the spring when these small trees are in bloom. They are a mass of yellow for several weeks during the blooming period. The tree, a member of the legume family, of course bears numerous seed which, along with the mesquite beans, are highly palatable to cattle and horses on the range.

The realization of the value of native plants has been actively put into effect in the manner of preserving the native cover when developing new subdivisions in Tucson. This has not only an esthetic but a very practical effect in helping to control topsoil which readily blows in this region of extended dry spells and gusty winds.

Several of the subdivisions, such as the Catalina Foothill Estates, have gone so far as to include in the titles to properties a clause dealing with the native cover. These restrictions

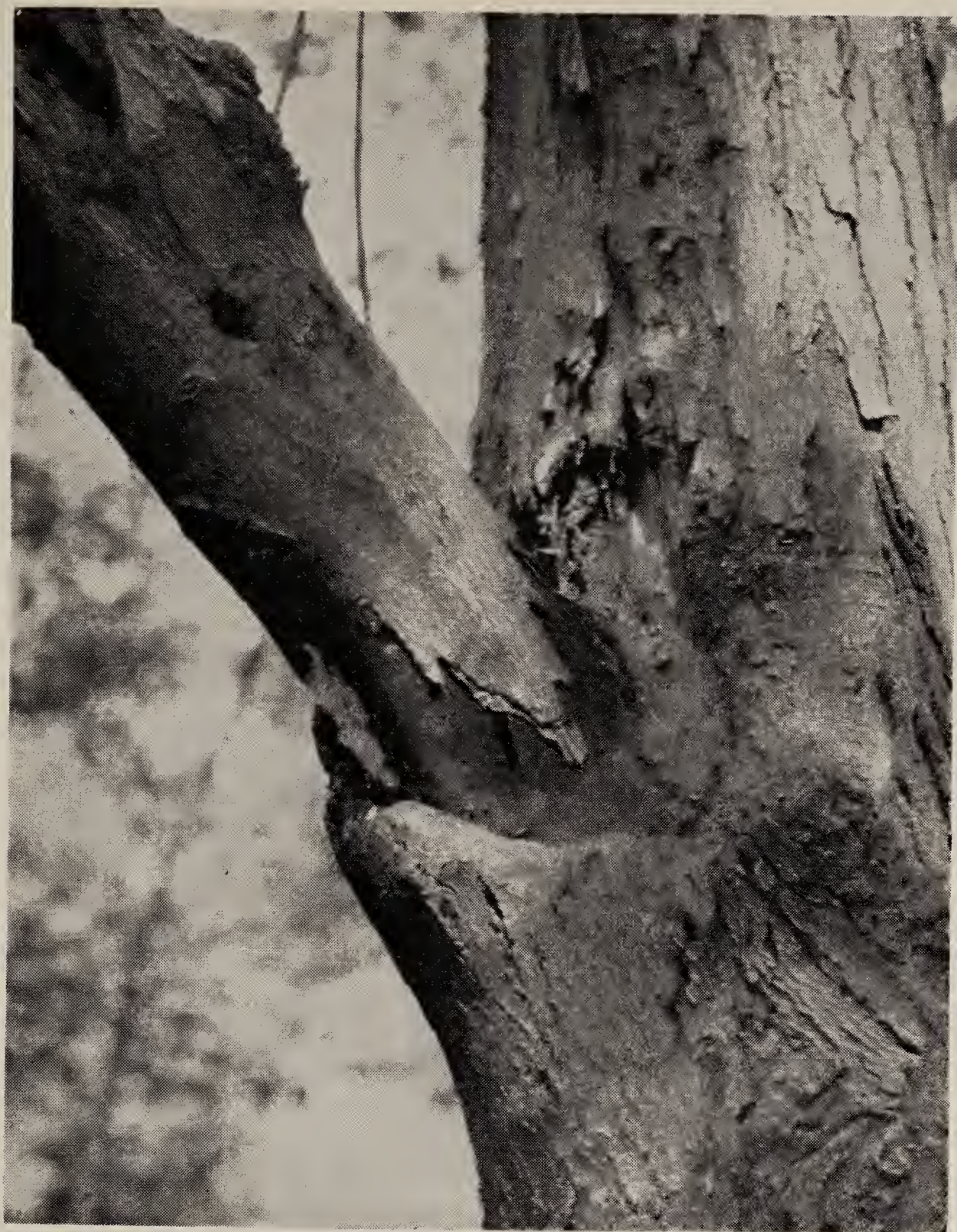
contain clauses to the effect that only those plants may be removed which are in the way of structures and the garden proper.

The accompanying photographs illustrate a strong point and that is that native plants may be employed with most types of residential architecture used in the west. Ecologically, and by their very habit, native plants are particularly adapted to today's low rambling style of architecture.

The homes in these pictures run the gamut from the traditional Southwestern style, the Mediterranean, the modern burnt adobe in the pueblo style, to the conventional modern home. In some instances the native vegetation has been added to, in others native plants have purposely been planted, and in another a compromise of natives and exotics has been employed to achieve a very effective planting. There are many outstanding homes and gardens in the Tucson area which have native plants as the dominating garden theme. The ones presented here are random photos taken in non-exclusive areas and ones in which the vegetation has not been specifically preserved.

After a period of years the architecture of any country or portion of it finally compromises function and climate. This is also true of landscaping but the period of time is longer. We in the west are on the threshold of this evolution, and to the thinking person it is difficult to deny the esthetic, ecological, architectural, and very practical maintenance aspects of employing native plants in our landscape architecture. Their value is proven, their future is yours.

Who can say what untold treasures are locked up in the sap of our common milkweed, the native "rubber-plant," and some others of our very common native plants?



Cut courtesy of the Shade Tree Digest.

UNPRUNED STUBS

Branch stubs, resulting from wind breakage, unskilled pruning practices, or other sources, should not be allowed to remain attached to the tree. Invariably the stub dies and is attacked by wood-destroying fungi which may spread into the heartwood of the trunk. Upon the death of the branch the tree attempts to seal off the resulting wound by developing a growth of callus which, as is shown in the accompanying picture, may

extend upward on the stub for a distance of several inches. Rarely, however, do such wounds ever heal completely. It is far better for the health and appearance of the tree that any stub, "big enough to hang your hat on," be pruned away and the cut painted with a good wound dressing. And now, when the branches are bare of leaves is the time to look for such stubs.

From The Shade Tree Digest.

A BOTANICAL GARDEN IN DENVER

By GLADYS C. EVANS (Mrs. John Evans)

President, The Botanical Gardens Foundation of Denver, Inc.



A Botanical Garden in Denver is soon to be a reality. In response to wide public interest the creation of a distinguished Botanic Garden in Denver has become one of the more noteworthy projects of the present city administration.

Fortunately the city already owns and maintains an ideal setting of great beauty for such a garden in the easterly portion of city park to the west of its Museum of Natural History and to the south of its Zoological Gardens. There, without undue capital expenditure or additional maintenance expense, the city will gradually create a distinguished Botanic Garden by rearranging and augmenting such existing plantings as should be preserved. This garden together with the Museum and the Zoo will constitute a Natural History area unique among American cities and bring greater fame and distinction to Denver.

As an instrument to that end the Botanical Gardens Foundation of Denver, Inc., was organized and a group of interested citizens were invited by Mayor Quigg Newton to serve as its Board of Trustees. The

City Council and the Mayor subsequently entered into a contract with the Foundation designating the Foundation an agency of the City to cooperate with the Manager of Improvements and Parks Thomas P. Campbell and his staff in the creation of such a garden.

Through the interest and good offices of the Colorado Forestry and Horticulture Association and its over 2400 members the Foundation received an initial donation which enabled it to secure and present to the city, at no cost to the city, a master plan for such a garden of high quality and great beauty. The Foundation anticipates securing numerous additional donations to the city of cash and of valuable plant material as soon as the city proceeds with the creation of the garden.

To prepare the Master Plan for this Botanic Garden the Foundation was indeed fortunate to secure the services of Mr. S. R. DeBoer, eminent city planner, landscape architect and horticulturist nationally recognized for the quality of his park planning and landscape work in the west. The city is already greatly indebted to Mr. DeBoer since much of the quality and beauty of its existing park system is due to his planning and expert knowledge of plants, trees and shrubs suitable for this climate.

Throughout the Botanic Garden existing and additional plantings of trees, shrubs and flowers will be properly marked by easily read labels. A number of gardens especially designed for the grounds of typical smaller homes will be exhibited, showing labeled varieties of plants which are hardy and dependable in this climate. Each month during the year the Bo-

tan Garden will present many plant groups of special interest and during the spring, summer and fall, displays of mass color will attract Denver residents and visitors alike.

The Foundation wishes to acknowledge with appreciation the wholehearted endorsement of its objectives, not only by Mayor Newton and the City Council, who authorized the agency contract, but by the Manager of Improvements and Parks Thomas P. Campbell, and the Assistant Manager David Abbott, under whose direction, with the the Master Plan as a general guide, the establishment of the Botanic Garden is proceeding as rapidly as possible.

This Botanic Garden should be of

great educational value and soon become one of the city's truly great assets.

On January 19, 1953, T. P. Campbell, Manager of Parks and Improvements, wrote Mrs. John Evans, President of Botanical Gardens Foundation of Denver, Inc.:

"The Master Plan for a Botanical Garden prepared by S. R. DeBoer & Company, Landscape Planner, and approved by the Board of Trustees of the Botanical Gardens Foundation of Denver, Inc., on October 20, 1952, has been approved by the City and County of Denver, pursuant to the agreement dated February 28, 1951, between the City and the Foundation."

HIGHLIGHTS OF THE PROPOSED BOTANIC GARDEN PLAN

Created by S. R. DeBoer for the Botanical Gardens Foundation

By CHARLOTTE BARBOUR

THE Botanic Garden plan is made in two major divisions: first the part which is a foreground for the new west wing of the Denver Museum of Natural History in City Park; and, second, the nearly one hundred acres of park land surrounding the museum which will be developed into the main arboretum of the garden.

The first part must be monumental in character to set off properly the museum building.

Water Display. A water effect with fountains and cascades will be an important feature. It is proposed to pump water to the upper level of the grounds, from whence it will drop over cascades into a pond at the main level and from there flow into a large, circular reflecting pool which will mirror the west facade of the museum. From this pool the water

descends to north and south by winding channels back to the lake below. These basins and streamlets will be planted to suitable aquatic specimens.

Flower Gardens. A large walled terrace on the level of the circular reflection pool will be used half for a Rose garden to contain a collection of five thousand roses and half for beds of flowering annual plants. A narrower walled terrace, with bisecting path, at a higher level will provide beds to contain, roughly speaking, 3000 perennials. Experiments will be made in these gardens for the adaptation of flowers to our soil and climate.

Shaded Pergolas or Lath Houses. These will be placed at the north and south ends of the flower gardens to be used to grow varieties of ferns, shade loving plants and tender plants.

Literally hundreds of varieties have not been seriously tried out here, so space in the lath houses should be reserved for the planting of many things rather than for any regular display.

West Section Down to the Lake. For this section it is planned to retain the open lawn and panorama effect as it is at present and to introduce a border of low trees of flowering character, mainly ornamental crabapples.

Section South of Museum. The soil in this section is now very poor and the plan calls for a regrading which would build two small hills with a shallow valley between. In this area could then be reproduced the forest vegetation that occurs on both the north and south slopes in the foothills and lower mountains.

Section Along South Creek. This is the part of the Garden on two sides of the little creek that emerges from the bank below the water display to run down the slope through the present lily pond back to the lake. It is proposed to build up a ravine here of native mountain stone and try to duplicate more or less the dark canyon feeling one gets in the mountains. This offers the chance to grow many wild mountain flowers and shrubs. Where the creek flows out below there will be plantations of creek-bottom plants.

Lilac Lane and Hawthorne Lane, in North Section. A very valuable collection of lilacs, given to the city two years ago by Mr. Milton Keegan, will be moved from its present site nearer to the new center of planting. To these will be added Hawthorne and Viburnum family plantings. They will be aligned as hedges, five to six hundred feet long with paths between, where they can be conveniently viewed from the roadway which

will make the northern boundary of the arboretum.

Trees. The acres surrounding the Natural History Museum which are to be developed as the arboretum already contain many trees. All worthwhile specimens, wherever possible, will be retained; notably the double row of sycamores along the drive south of the museum and the groves of cottonwoods to the north in the Zoo inclosures. Additional groups of trees will be introduced where soil conditions are suitable. These will include a fenced apple orchard (an experimental plot to aid homeowners and commercial growers), a collection of oaks to the north of the museum, an Elm-Ash-Walnut association, collection of olives, exhibit of fastigate (upright form) trees, etc.

The parking facilities for the museum have had to be greatly enlarged and these requirements have been worked into the Botanic Garden plan. There will no longer be a roadway around the western front of the museum but two loop roads are already under construction which will allow cars to discharge their passengers just above the water and flower garden displays, from where they can behold the entire effect, terminating in the view of the mountains.

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MILWAUKEE'S ARBORETUM

The accompanying pictures show some details of the arboretum which the Milwaukee Parks Department has developed in Whitnall park. The arrangement of all plants is first for their beauty and next for their educational value. Everything is plainly but inconspicuously labeled with inexpensive tags which can be easily replaced when the inevitable souvenir hunting predators carry them off.

A pleasant building serves as en-

trance to this part of the park. In this building is a small library, comfortable seats and rest rooms.

The citizens of Milwaukee and visitors to the city are learning to use this well-kept arboretum and increase their knowledge of the plant material which will grow there. One of the very attractive features of this arboretum is its rose garden which contains around 6000 rose plants.



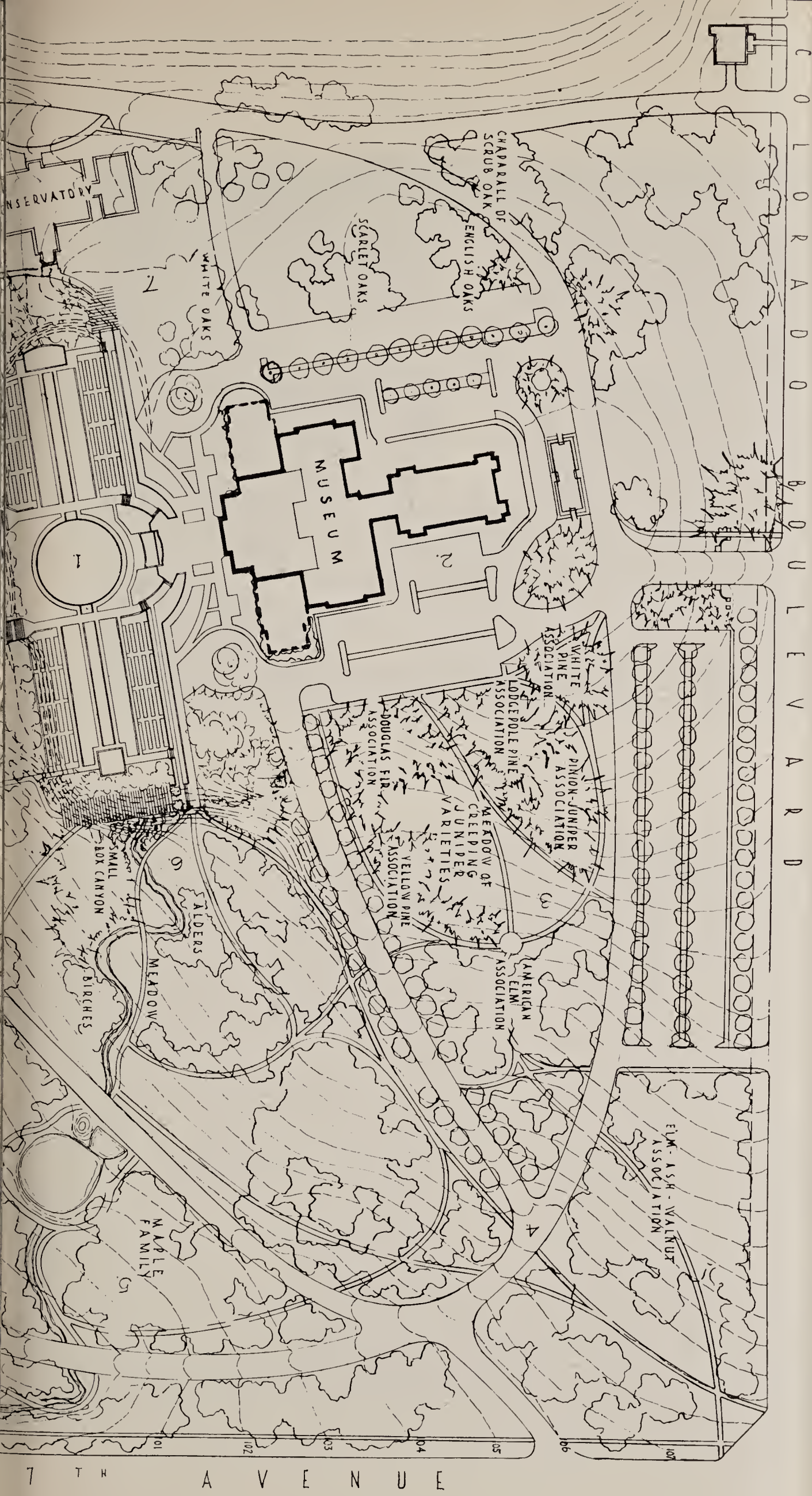


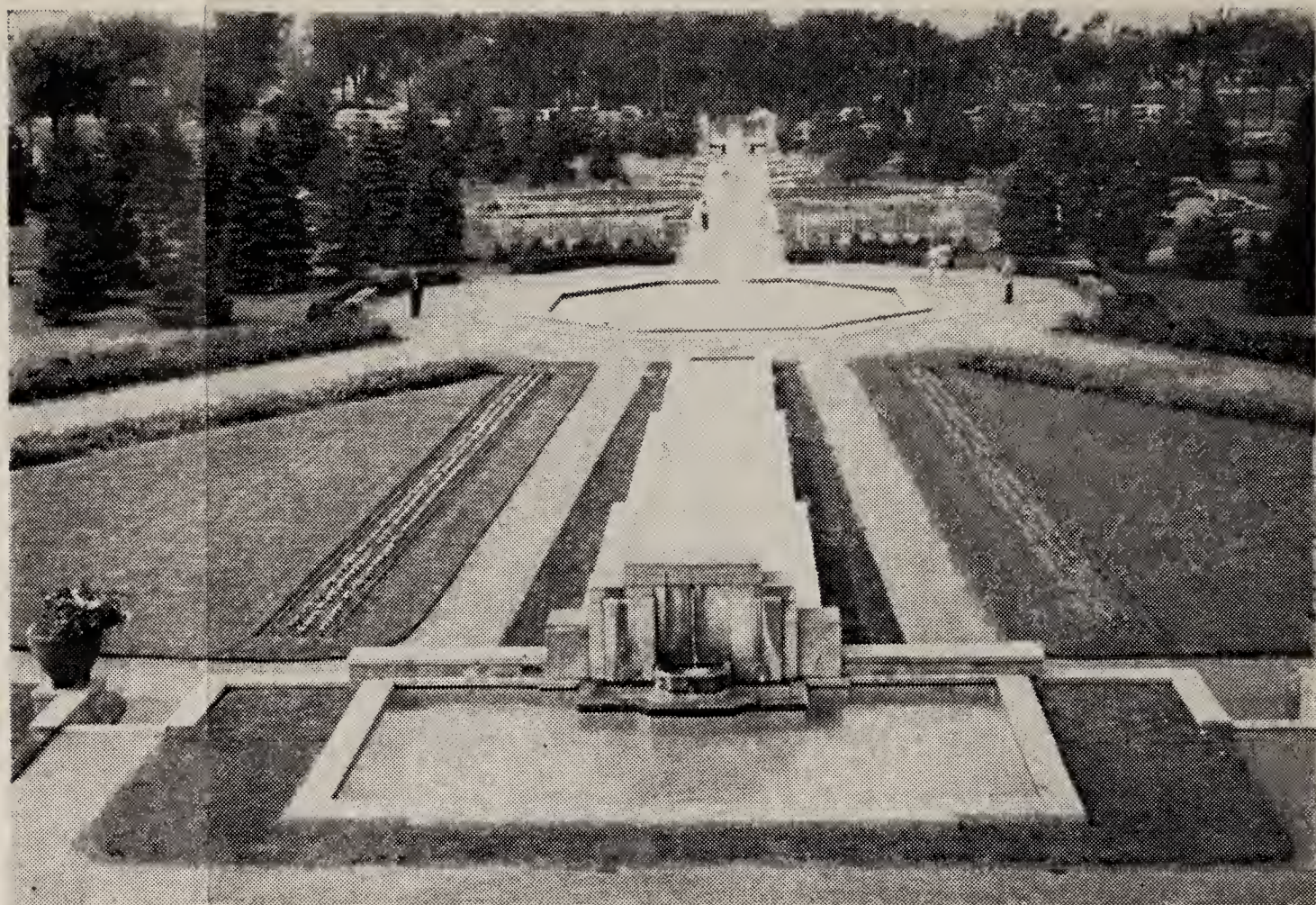
MASTER PLAN FOR A BOTANIC GARDEN IN DENVER

Prepared by S. R. DEBOER & Co.,
Landscape Planners

SCALE
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The best annuals suited to the region are used to advantage in the flower garden in front of the Administration Building.

THE MONTREAL BOTANICAL GARDEN

By HENRY TEUSCHER

By Permission from *Your Garden and Home*, March, 1951

THE aim of any botanical garden is, of course, to study plant life and for this purpose it gathers together collections of interesting plants from all over the world. This statement by itself sounds very dry, and the average person actually visualizes a botanical garden as a series of small beds filled with unattractive looking plants which bear incomprehensible Latin names. Though the Montreal Botanical Garden now is 14 years old, having been constructed mainly during the years 1936-39, many citizens of Montreal still come to us every year who have never visited our garden before. They usually are greatly astonished at what they see and express their reaction somewhat as follows: "I did not know the Botanical Garden is like this or I would

have visited it long ago. I must come often from now on." We take this as a compliment and as a confirmation of our policy being the right one.

Since our institution is tax supported—owned and maintained by the City of Montreal—we feel that our main aim must be to serve the taxpayers. Therefore, our plant collections, which are very large (including some 12,000 different kinds), are disposed in such a manner that the practical uses to which the various plants may be put are clearly apparent. Besides, no effort has been spared to make the whole arrangement as aesthetically attractive as it can possibly be made. The overall result is a beautiful park, more varied in its beauty than any ordinary park can possibly be. People may visit it

merely for the pleasure of looking at handsome plants or to rest in exceptionally attractive surroundings. However, nobody can pass through our garden without consciously or subconsciously picking up some information new to him. His attention may be arrested by a particularly striking combination of flowers, by a handsome shrub suitable to form the very kind of hedge he had been wanting for his garden, by a condiment or a vegetable he had heard of or by a medicinal or poisonous plant about which he had read but which he had never seen.

In this manner we teach, since the second most important purpose of a botanical garden is, of course, not only to accumulate but also to disseminate knowledge of plant life. For this same reason we consider it our duty to answer questions and to supply information whenever called upon to do so. Consequently our telephones

are kept ringing and our mails are heavy throughout the year.

It is not easy to describe in words what our garden looks like. The accompanying photographs will help to give an idea, but the best way is to come and see.

In order to make it as convenient as possible for the visitor to find whatever particular plants he may be most interested in seeing and to render the displays as attractive as well as instructive as possible, a series of individual gardens have been arranged each of which contains different collections, or rather selections.

The first of these to catch the eye is a terraced garden of summer-flowering annuals, located in front of the administration building where it is framed by dark conifers. It shows brilliantly colorful combinations of some of the best and newest and most desirable varieties which are now offered by the trade. This planting is



Entrance to the large and interesting rose garden, featured as a center-piece of the extensive perennial section.



Peony section with the Administration Building in the Background.

never the same from one year to the other and is always composed of the choicest types selected from many hundreds which are first studied and compared in a test garden located elsewhere. The visitor has a chance not only to feast his eyes on a brilliant display and to see how flower colors may be combined for best effect but also to find out which are the most floriferous new varieties now available.

There are many other such groupings. The garden of ornamental perennials contains over 1,000 varieties and shows selections of the best varieties of such perennials as iris, asters, phlox, peonies, delphiniums, hemerocallis, lilies and narcissus in hedge-enclosed sections. It includes several samples of mixed borders. A rose garden occupies its center.

The garden of economic plants contains one of the most complete collections of plants useful to man assembled anywhere and is arranged in

sections according to usage. The bilingual labels give information on origin and use. This garden, by the way, is one of the most popular of all. The various varieties of vegetables shown are carefully selected for our climatic conditions. The sample vegetable garden is a plot 25 x 100 feet where enough vegetables are raised to supply a family of five and where proper crop rotation is demonstrated.

The garden of small fruits contains raspberries, blackberries, currants, gooseberries, hazelnuts, etcetera. The fruit garden, including a pergola covered with a collection of grapes, contains not only a limited selection of the best varieties of such fruits as apples, plums, pears and cherries but also nut trees, quince and edible sorbus. The garden of dwarf fruit trees has apples and pears as well as plums, cherries, peach, apricot and quince on dwarfing stock, trained to bush form as well as in various types of cordons.

The medicinal garden is made up of separate sections: the officinal plants of the pharmacopeia; the most worthwhile of the home remedy plants; poisonous plants (including hayfever plants); the plants used for medicinal purposes during the middle ages, before America was discovered. The latter are displayed in a cloister garden with an old-fashioned roofed-over well for a centerpiece.

The terraced fruticetum contains a large collection of shrubs. The formal rock garden, located in the center of the fruticetum contains a colorful display of the most desirable rock garden plants.

The aquatic garden consists of 109 individual basins and contains a large collection of native and foreign water and bog plants. Hundreds of varieties of summer-flowering annuals as well as vegetables are tried out and studied each year in a test garden. The partly planted arboretum will eventually contain a large collection of trees from all over the world, as

far as they are hardy under our climatic conditions.

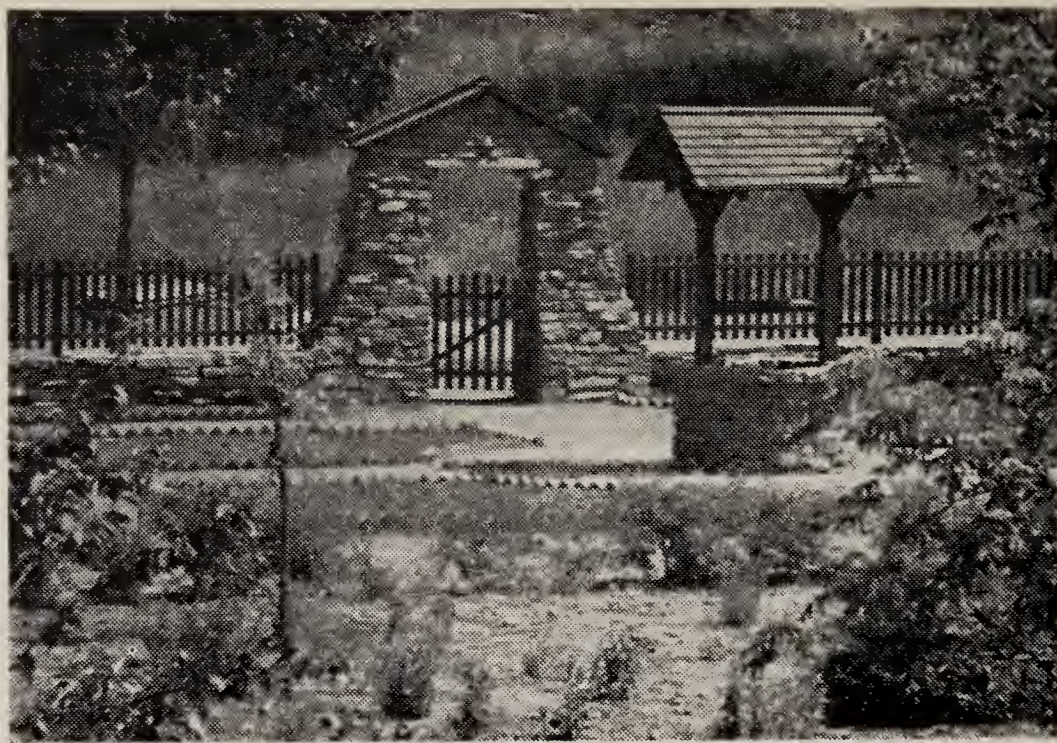
There is a children's garden where each year some 200 school children receive practical instruction in gardening by planting individual plots with flowers and vegetables. At present under construction and to be finished next year is a garden of plants which the American Indians used for food, fibre, oil and dyes. This will give us an opportunity to show to the public a large collection of native American plants, while attaching to the latter the greatest possible interest.

There are additional sections either partly constructed or planned. The alpinum is a series of artificial hills (partly constructed) on which the alpine plants of the world are to be arranged in a naturalistic setting, separated as to geographic origin. The ecological groups, containing two fairly large lakes (already constructed) will show typical samples of woodland and prairie, as characteristic for different parts of Canada.



Part of the nursery and test garden used to supply planting stock.

The old-fashioned well featured in the cloister garden where plants used for their medicinal value by the American Indians are attractively grouped.



The taxonomic garden, which is to contain plants arranged in systematic sequence in families and genera, will serve the student of botany. The genetic garden will demonstrate the principles on which the plant breeder has to base his work. The physiological-morphological garden will give an idea of how plants adapt themselves to different living conditions and the functions of their organs.

As will be seen from the above outline, those sections which are most likely to attract the general public were constructed first. The soundness of this policy has been proven

by the great and constantly increasing popularity of the garden. It is our hope that it will soon be possible to finish the construction of the large conservatories for which foundations were built before the war broke out. This then will enable us to show to the public our rather unique collections of tropical plants. It includes not only those which are of greatest economical importance but also the most interesting and the most beautiful plants of the world.

The activities of the Montreal Botanical Garden are by no means limited to the display of plants. It takes



The central axis of the perennial garden which has over a thousand varieties and several good mixed borders.

an active and often leading part in all horticultural endeavor throughout the city and the province. It trains practical gardeners, gives public courses in gardening, holds flower and vegetable shows and other exhibits and regularly shows educational films. Scientifically it engages in plant exploration, the study of plant diseases, the study of soils, the breeding of plants and the study of plant propagation. Its findings are published in popular or scientific pa-

pers. It exchanges plants and seeds with botanical gardens all over the world.

A modern garden which combines the practical with the scientific and which makes serious and untiring efforts to reach and to interest the general public, can exercise a tremendously valuable influence on people's living habits and, in fact, on human progress in general. It is our ambition to serve in this capacity as far as we are able to do so.

THE ARNOLD ARBORETUM

By DONALD WYMAN

Reprinted from the *Bulletin* of The Garden Club of America, Nov. 1952, by Permission of The Garden Club of America and The Arnold Arboretum

What the Arnold Arboretum Is

FIFTY years after he became the first Director of the Arboretum, Charles Sprague Sargent described this great garden of Harvard University as a "museum founded and carried on to increase the knowledge of trees," and directed "not merely as a New England museum but as a national and international institution as anxious to help a student in Tasmania or New Caledonia as in Massachusetts."

The Arnold Arboretum in Jamaica Plain, Massachusetts, stands today as a living unfinished monument to the man who devoted more than a half-century to developing it into a center of tremendous scientific value as well as of distinctive charm. To the generosity of James Arnold, a New Bedford merchant, the Arboretum owes its existence, and to Benjamin Bussey of Roxbury, that portion of the land upon which it was started. But to Sargent belongs the credit of transforming a deserted farm into one of the world's greatest living collections of hardy shrubs and trees.

Beautiful at all times, the Arboretum is irresistible in the spring when

the cherry blossoms, forsythias, magnolias, lilacs and azaleas usher in the gay season. Singly, in couples, by families, and groups of varying size and interests, visitors come to share the color, fragrance and sylvan peace of the garden from which motor traffic is excluded. It is not unusual to have fifty thousand nature enthusiasts in the Arboretum on "Lilac Sunday," or when the cherries and azaleas are at their height of loveliness. School children, Scout troops, garden clubs, sightseers and countless others broaden their appreciation of nature through visits to this park.

In addition, the Arboretum is an experiment station in horticulture, cooperating in various ways with agricultural experiment stations throughout the United States and Canada. There is a particularly close affiliation with other divisions of Harvard University, such as the Bussey Institution, the Cabot Foundation, the Departments of Biology and Landscape Architecture, and other neighboring universities. It also is a service center which supplies valuable information to landscape architects, nurserymen, park administrators, foresters and

home owners interested in hardy shrubs and trees throughout the entire country. It is interesting to note that the daily correspondence of the Arboretum staff members is as much with individuals thousands of miles away who have asked for information, as it is with residents of Massachusetts. It is a clearing house for seeds and plants which are sent to it from every part of the temperate regions of the world.

Nearly 6,000 kinds of trees, shrubs and vines may be found in the Arboretum. Its Library, in the Administration Building inside the Jamaica Plain Gate, contains probably the best special collection of books on woody plants outside the British Museum, and its Herbarium, in the same building, contains a notable collection of preserved specimens.

The Arboretum is controlled by the President and Fellows of Harvard University acting as trustees under the will of James Arnold. It is open to the public every day in the year from sunrise to sunset.

Early History

In March, 1872, the University set aside 125 acres of the Bussey Farm for the new Arboretum. From time to time other tracts of land were added until the total area today is 265 acres in Jamaica Plain, with an additional 150 acres in Weston, thirteen miles away. As only a small part of the potential number of specimens which might be expected to withstand the climate were at that time to be found in any collection, it was necessary to go outside of North America to the far corners of the earth to procure the thousands of exotic plants which make the Arboretum an important scientific station. The search, which is still going on, has included every country in Europe, the Caucasus, Eastern Siberia, China,

Korea, Japan, Formosa, Australia, Indo-Malaysia, and Africa from the equator south.

A Small Budget for a Great Task

In November, 1873, Professor Sargent, then thirty-two years of age and Director of the Harvard Botanic Garden, was appointed Director of the Arnold Arboretum. Under the terms of the Arnold will, which set apart two-thirds of the income from the bequest to accumulate until the fund reaches \$150,000, he had only \$3,000 a year with which to convert a farm, partly covered with native trees, into a scientific tree station. The property had excellent possibilities with several hills and meadows, a brook, small ponds, a rocky cliff and a grove of splendid native hemlock, but there was a great need of cultivation. The work of forming a nursery was begun at once, greenhouses of the Bussey Institute being available for the propagation of the few plants which could at that time be found in the vicinity.

A Unique Arrangement

An idea for making substantial improvements despite the small budget was proposed early by Frederick Law Olmstead, Sr., the noted landscape architect, and no other decisive steps were taken until it was finally accepted. Mr. Olmsted was planning a park system for Boston at the time, and he suggested the possibility of making the Arboretum's land part of the system, the city to build its roads and provide police protection. Professor Sargent welcomed the idea, but the public was apathetic and both city and college authorities were antagonistic.

But neither apathy nor hostility was a match for the enthusiasm, the conviction and the determination of the two pioneers, whose prophetic vision took in the manifold advan-

tages of the arrangement. It took nearly ten years to win the fight, but won it finally was.

In December, 1882, the City of Boston took title to the lands of the Arboretum and leased the whole tract back to the President of Harvard for a thousand years, at a rental of one dollar a year, "and so on from time to time forever." The Arboretum received all the advantages of perpetual, tax-free ownership of the land and in return, the University agreed to open the Arboretum to the public from sunrise to sunset during every day in the year, while reserving entire control of the grounds with the exception of the drives and walks.

Contributions of Plant Hunters

The first opportunity to obtain American plants not then in cultivation came in 1877 when Sargent was commissioned by the Federal government to prepare a report of the forests and forest wealth of the nation. He travelled into every wooded region from the Atlantic to the Pacific and chose able assistants from various parts of the country. A number of these assistants continued to supply seeds and specimens and secured for the Arboretum information about the trees and shrubs in their native habitats. Close contact with all the important European and American botanic gardens and nurseries enabled Sargent to exchange plants and obtain many additions to the garden. The first direct consignment of seeds from Eastern Asia sent from the Agricultural College at Sapporo, in northern Japan, reached the Arboretum in December, 1878. Since then, it has assembled a notable collection of Oriental trees and shrubs, many of the most ornamental coming as the result of the travels of Ernest Henry Wilson, an Arboretum staff

member from 1906 until his death in 1930. Today correspondents from all over the world are still sending in plant material, some of which is new to America. Some 3,000 woody plants never before grown in America have been introduced here as a result of the Arboretum's efforts—an imposing record!

Simultaneously with the formation of the living collections Sargent built up a rich botanical library and a large herbarium. Besides being a storehouse of scientific knowledge the Arboretum was becoming a research laboratory for experiments with decided commercial value. In the scientific knowledge of landscape architecture as well as of timber production in the United States the Arboretum plays an important part, for here the habits of more kinds of trees can be studied than anywhere else in the country.

A Living Memorial

On March 22, 1927, in his eighty-sixth year, Charles Sprague Sargent died after devoting 54 years of his life to the development of Arnold Arboretum. This great loss was followed a few years later by the death of E. H. Wilson who had done so much, with Sargent, to introduce new plants into America. Since the passing of Sargent, others have aided in carrying out his precepts, in adding to the Arboretum's endowment and in considerably widening its scope of activity and usefulness.

What Can Be Seen Today

Today, 80 years after the Arboretum was first established, there is much that can interest everyone who grows woody plants. There are about 6,000 different species and varieties growing within its borders—something of interest at every season of the year. Such numbers may not mean much but when one considers

that here can be seen 137 different maples, 213 different crabapples and nearly 500 different lilacs, it is not long before one realizes the tremendous number of hardy plants growing here together in these extensive collections.

There is a hedge collection of 115 different kinds of clipped hedges, showing one kind of use to which certain plants can be put. There is a collection of 150 different kinds of ground covers at the Case Estates, thirteen miles from Jamaica Plain. Here also can be seen thousands of small plants in the nurseries and seed beds, as well as interesting experiments under way in the growing of these plants.

The herbarium with over 650,000 sheets and the library with nearly 50,000 volumes dealing with woody plants make these essential parts of the Arboretum outstanding in American botanical circles today.

In the propagating department at Jamaica Plain can be seen many interesting seedlings, grafts and cuttings from all over the temperate regions of the world. Here new plants come first before they grow to sufficient size to be planted permanently in the Arboretum collections. The program in Plant Breeding is now becoming a very important phase of the work, and several new plants have originated as a result of this program and are already being distributed.

The Arboretum is best known, first for the men like Sargent, Wilson, Alfred Rehder, J. G. Jack and W. H. Judd who have done so much to increase our knowledge of woody plants in America. Secondly it has earned world renown for the plants it has first introduced. The lengthy list includes over 3,000 different items as far as America is concerned. Such commonly used plants as the Japanese Barberry, the Chinese Dogwood, the Dove tree, the Bigleaf Wintercreeper,

the Chinese Witch-hazel and more recently such plants as the Forsythia "Arnold Dwarf," the Metasequoia and the "Dorothea" crabapple—these are only a few of a very long list.

And the work is still actively going on. Last year nearly 500 plants were brought from Europe as either being new to the collections in the Arboretum or as being those which have been here at one time or another but have since been "lost." New seed collections were made specifically for the Arboretum in Chile, Argentina and northern Japan this year. Great care is taken in the growing of these plants, in their proper identification and their growing needs, to learn everything about them so that when they are finally distributed to the gardeners of America, recommendations can be made concerning their care.

And so, Harvard University's Arnold Arboretum in Boston is still actively engaged in the discovery, description, growing and finally the distribution of the new and better ornamental woody plants. Visitors are always welcomed and although they see more bloom in May than at any other time of year, a visit any time is really worth while, for all plants are clearly marked, maps can be procured to show where the main collections are, and despite the automobile prohibition out-of-state visitors can even obtain permission to drive through the grounds.

The average nurseryman cannot afford to test out a number of plants that *might* grow all right in this Rocky Mountain region. A Botanical Garden is prepared for just that.

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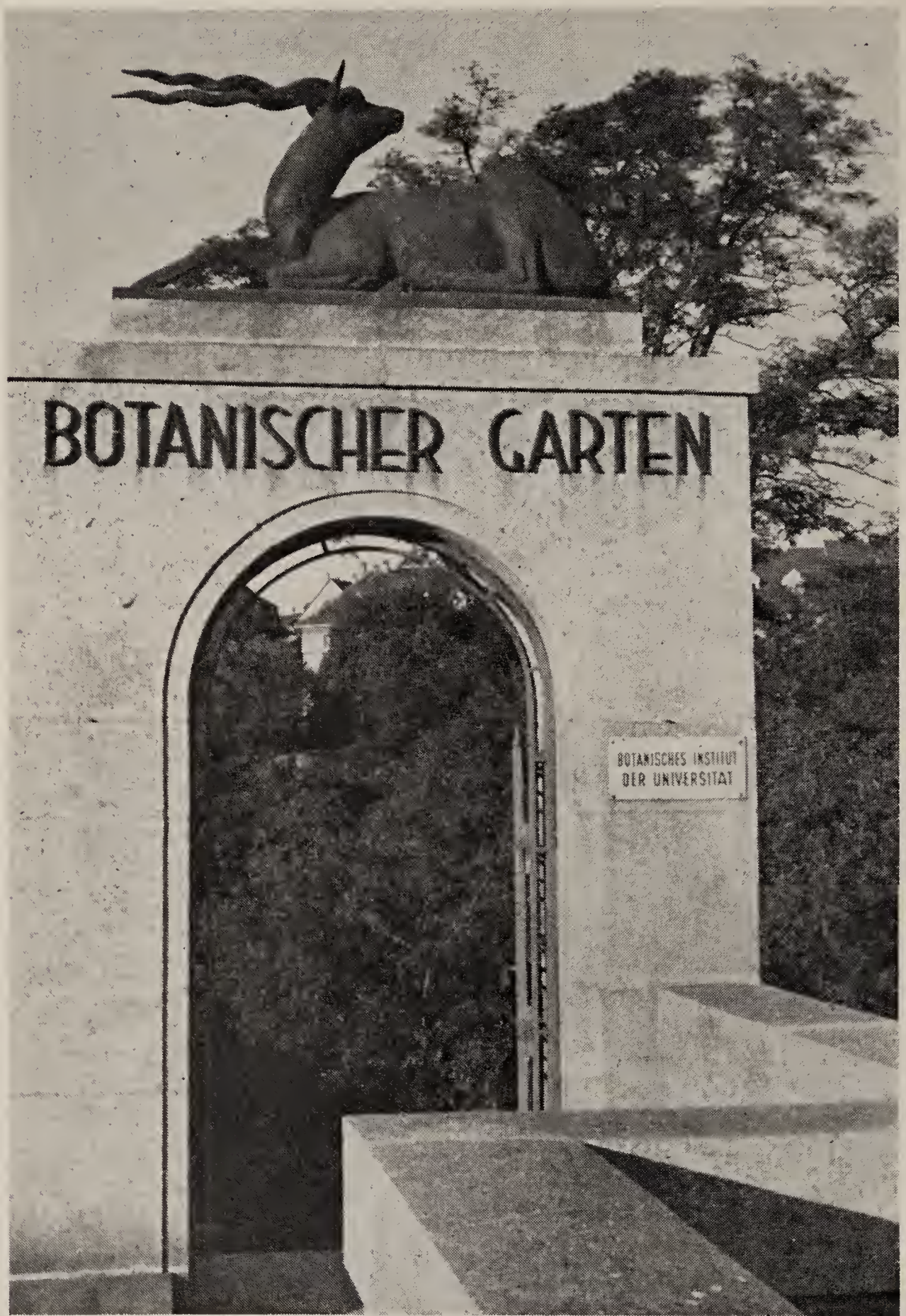
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Hedge trials at the Morden Experimental Grounds in Manitoba, Canada.



Forested native trail along the bank of the DuPage River in the Morton Arboretum, Lisle, Illinois.



Above: Entrance to the Botanic Garden in Berne Switzerland. Right: Top and Middle, Botanic Garden in Brussels, Belgium. Below: Botanic Garden in Copenhagen, Denmark. On Page 34 and 35: Scenes from Botanic Garden at Schynige Platte, Switzerland, overlooking Jungfrau.



*All pictures taken in Europe by N. Walter Pesman and loaned by him
for use in the Green Thumb.*





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TREES OF LONG ISLAND

Congratulations go to the Long Island Horticulture Society for its comprehensive as well as interesting publication of this past summer, "The Trees of Long Island," by George H. Peters.

This booklet has real merit for anyone interested in learning about the distribution, utilization and significance in development of this region and the various outstanding tree collections in Long Island. A complete list of native tree species is also included.

It would be most desirable if every state would gain the incentive to follow suit and would compile a similar publication for the information and interest of those of us from different parts of the country. Perhaps the completeness of this publication will act as the needed inspiration.

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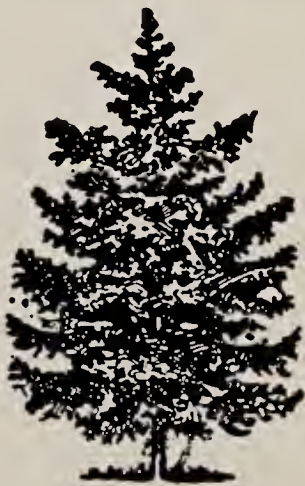
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FEBRUARY GARDENING

IN FEBRUARY the good gardener will alternately be encouraged by the appearance of a crocus or snowdrop flower and discouraged by a sudden snow storm. In our area the weather is even more unpredictable than in other places, so do what you can, when you can, and "hole-up" when the weather is bad. A good gardener will find things that need doing whatever the weather.

Lawns

Many lawns are seriously damaged at this time of year from the soil becoming too dry. Especially in sunny places south of the house and on south-facing slopes will the soil be dried out, even when adjoining soil may still be frozen. The only way to be sure what the moisture content of the soil is around the roots of your plants is to dig in occasionally and see. You will be urged to fertilize the lawn this month and will be puzzled to know what to do. A slow-acting fertilizer which will also act as a mulch to protect the surface of the soil might be a profitable thing to apply at this season, but it would be a question whether a quick-acting fertilizer would be worth the expense until growing conditions are better. If your lawn is old or in heavy clay soil it might be benefited by a spiking to let in air, water and fertilizer more readily. Rolling when the surface is wet and soft make the lawn look better at the time but may tend towards further compacting the soil.

Roses

Roses should have been hilled up several months ago. If they have been forgotten it might be worth while to pile some dirt around them yet, as

much of the winter damage may come during the changeable weather in the next two months. At least do not let a few warm days fool you into uncovering things now. Be sure that the soil around the roses roots is moist.

If you want to cut off some of the completely dead stems there is no reason why it should not be done.

Trees and Shrubs

If you have scale on your elm, ash, cottonwood, dogwood, lilacs or Cotton-easters they should have a dormant spray whenever the temperature is well above 40 and it is not too windy. Pruning may be done any time that the weather permits. This is usually the best time to prune grapes. Check to be sure that they do not need a good soaking. Large trees may be moved now with balls of earth, using power moving equipment.

Garden

The most profitable job that can be done in the garden during warm days is to improve the soil. If humus from the compost pit or manure is available it can be spread and whenever possible spaded under and thoroughly mixed with the soil. Transplanting of shrubs, trees, and perennials can be done in places where the frost has left the ground. Rubbish can be cleaned up. New beds and borders can be staked out and architectural features like pergolas, gates and walks constructed.

Check over the garden tools and repair them where necessary. Sometimes a little paint will lengthen the life of garden tools considerably. Finish up the planning for new plants and get in your orders now.

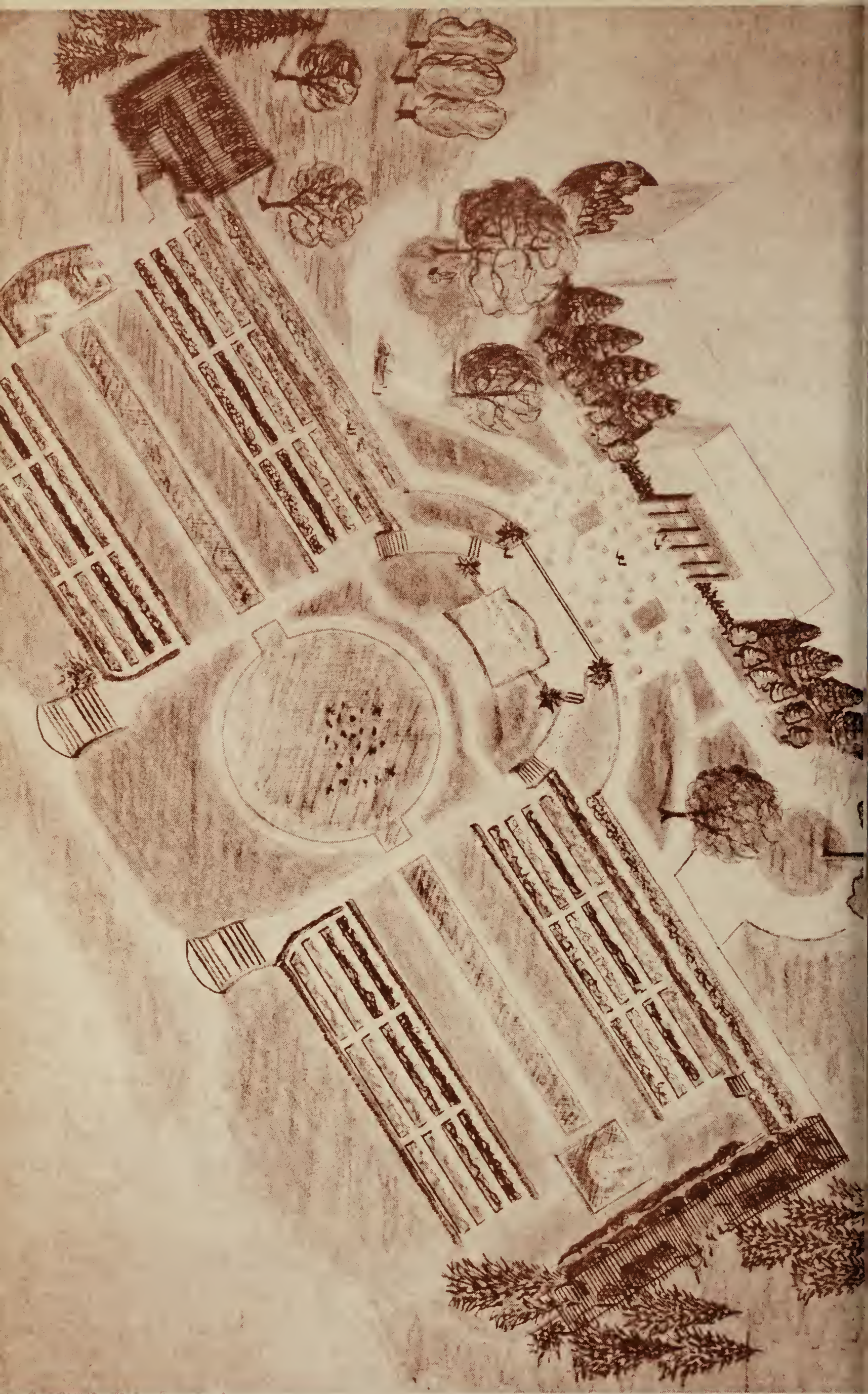
Indoors

The house plants will need frequent inspections. Look for the first signs of scale insects, mealy bug and aphids. A little attention now will prevent serious infestations later. There will be the inevitable Christmas plants which you will want to try to preserve. When Cyclamen are through blooming let them gradually dry up in a cool place and save the bulb if you want to so that it can be started into growth again later. Move the cactus and succulents into a sunny place and the philodendrons and ferns into a shady place. Gloxinias and African violets like a place where there is light but not much direct sun. If you have potted tulips or narcissus for winter blooming you may bring a few out where there is more light and heat every few weeks. One of the best things that can be done to keep house plants happy and free of pests is to wash their leaves every few weeks. Handle them carefully and let them dry out of the sun.

Check over the stored bulbs of gladiolus, dahlias, tuberous begonias and other things. Be sure that they are not too hot or too cold, too dry or too damp.

It is fun and often profitable to arrange to start the seeds of perennials, annual flowers in the house or a heated frame. The new electric heating cable takes the guess work out of hot bed operation. A flat of soil in a sunny window will accommodate a great number of plants when small and these may be transplanted into pots to keep them growing until the weather is suitable for setting outdoors.

If you want to hurry spring along a little bring in twigs of willow, forsythia, plum or spirea and watch them send out buds, flowers and leaves in vases of water.



March, 1953

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The Green Thumb

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The Green Thumb

Vol. 10

MARCH, 1953

No. 3

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Designs in wrought iron for front and back cover by Jack Harenburg.

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ALICE FOULK DALBEY.....	Editorial and Adv. Asst.	PATRICIA WHARFIELD.....	Asst. Librarian
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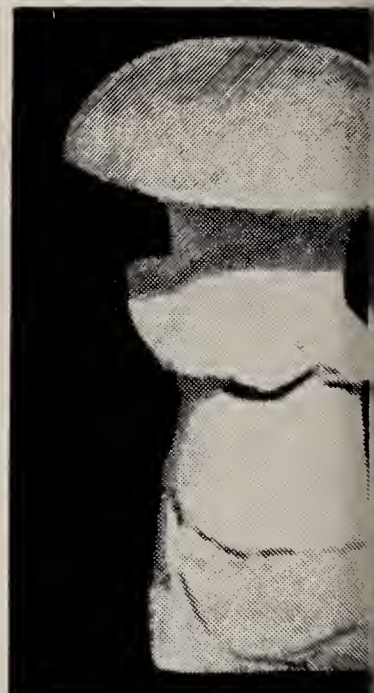
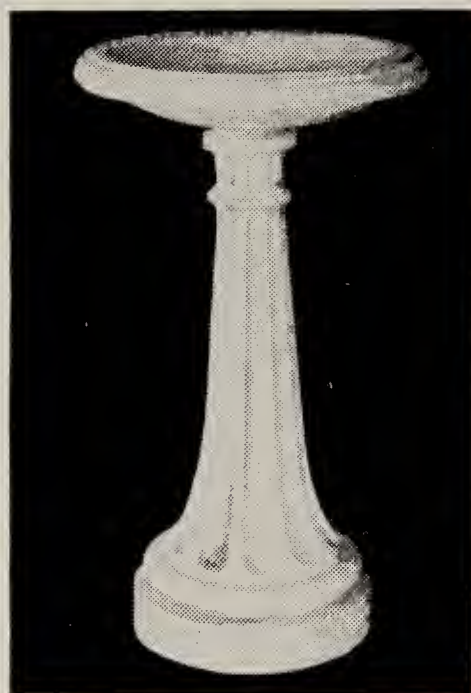
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Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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Secretary-TreasurerMildred Cook
Editor.....George W. Kelly

MARCH SCHEDULE

- Mar. 1, Sunday. Snowshoe trip to Silver Creek, out of Empire. Usually good snow in this area.
- Mar. 8, Sunday. Trip to locate the first wildflowers that sometimes come in warm places at this time of year. Location, Indian Creek above Sedalia. Leader, George W. Kelly.
- Mar. 11, Wednesday. Organic Garden Club at Horticulture House, 8 P.M.
- Mar. 15, Sunday. Snowshoe and ski to St. Mary's glacier area. Beautiful, wild country.
- Mar. 19, Thursday. Floyd Wilson will show some of his exciting pictures of the Arctic circle country in Alaska. 8 P.M. at Horticulture House.
- Mar. 22, Sunday. Tree trip on snowshoes or skis, led by the "Tree Lady"—Mrs. Charlotte Barbour. To Apex and American City. Distance travelled depending on snow conditions (and condition of the party).
- Apr. 5, Easter Sunday. Hike or snowshoe trip depending on snow conditions to Bakersville and Kelso Mine. Call TA 3410 or PE 5565 for details of trip; starting time, length, equipment needed and transportation.

USE THE LIBRARY

To accommodate those who wish to use the valuable collection of books assembled at the Helen Fowler Library in Horticulture House we have arranged to have the house open Tuesday evenings from 7 to 9:30. Some one will be in charge to help any interested gardeners find the information that they want and help them interpret it to fit the climatic peculiarities found here. This is an experiment in an attempt to make the services at Horticulture House available to those who need them. This will begin the first Tuesday in March and continue as long as sufficient use is made of it and volunteers are available to help.

CLASSES IN YOUR COMMUNITY

As time permits we will help to organize classes in gardening or short lecture courses right in your own neighborhood. If you can get a dozen or more people interested and will provide a meeting place we can often supply speakers. By learning the peculiarities of this climate and the proper plants to grow here you may save yourself many dollars and have a more satisfying garden. Call us.

Part of the material for this issue was gathered by the Assistant Librarian, Patricia Wharfield.

COMMITTEES

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Dr. Moras L. Shubert.....	Botany Dept. Denver Univ.

WE NEED YOUR IDEAS

During 1953 we plan to have most of the issues of the Green Thumb arranged by areas or counties. We will start the system with Jefferson County in April. Mrs. Vella Hood Conrad with many helpers is collecting material from Wheatridge, Lakewood, Arvada, Golden and all the other communities of Jefferson County. This is due to be an intensely interesting issue, not only to the residents there but to all others who want new and better ideas on how to garden in Colorado.

The July issue will be done by residents of El Paso County—Colorado Springs and vicinity. June will be Arapahoe County, with Mrs. Philip Emery collecting material from the Littleton area and Mrs. Bernice Petersen from the Englewood vicinity.

November will probably be the mountain areas and August, Larimer County. Mrs. Ormsbee is collecting material from Otero County (La Junta, Rocky Ford, Swink) for the September issue. Boulder County will have October.

Later there will be an issue for the Plains Area, Western Slope and any other town, county, area or state that will volunteer to collect material from good gardens and good gardeners. This will give EVERY member of the Association a chance to help edit one issue of the Green Thumb. If you are included in any of these areas already assigned will you write in at once and give us a list of any good gardens or features of gardens, or any one capable of writing a good story. If you are not included in any of the areas assigned now will you let us know when you would like to have your part of the country represented.

Don't hesitate because you think that you can't write or do not have good pictures. Give us the facts and we will make a story of them. Do it now and pass on to others the good things in your community. It will do others good and bring recognition to your community.

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MARCH

By MAY ARNO

(By Permission)

March the world awaking, at the throb of Spring.
Sets the cobwebs breaking, sets the spheres to sing.
Spraying silver showers, over sunlit scene,
Rousing early flowers on the emerald green.
Birth anew revealing, faith with beauty rife.
Stars of hope are gleaming in the orbs of life.

PRESIDENT'S REPORT FOR 1952

By FRED R. JOHNSON

As given at the Annual Dinner, January 29, 1953

THIS is the 69th annual meeting of the Colorado Forestry & Horticulture Association, and in accordance with an ancient and honorable custom it now becomes the duty of the President to report to the membership on the accomplishments of the Association during the past year. When I took over a year ago it was with many misgivings, following the eight years of splendid leadership of Mrs. John Evans.

Certain objectives were set up. Naturally you will want to know what the Association has done during the year to justify its existence.

First of all, Horticulture House, more and more, is recognized as a center for horticulture and gardening information. People turn to it also for help on conservation, forest and park projects. One wonders why this should be; since there are city, state and federal foresters, horticulturists and entomologists. Perhaps it is the present trend towards more reliance on voluntarily supported associations rather than on tax supported agencies. A pleasing part of this to me is the amount of volunteer work on the part of our membership. When our expert at Horticulture House is out of town or engaged in meetings these volunteers have taken the calls and have furnished information. Our special thanks to Earl Sinnamon, Henry Gestefeld, Bill Lucking, Herbert Gundell, John Swingle, Mrs. John MacKenzie, Mrs. Bernice Petersen, Mrs. E. R. Kalmbach and many others. We are especially grateful to members of the Garden Club of Denver under the leadership of Mrs. Frank McLister and committee chairman Mrs. Eric Douglas for the many hours they have helped at Horticulture House.

Perhaps the Association's greatest contribution to our membership is The Green Thumb—500 pages of expert advice, pictures, drawings, produced last year at a cost of \$8,210, not counting the salaries of the Editor and Assistant Editor. Advertising income was \$3,511 during 1952. The actual cost of the Green Thumb to each member is \$3.25, so those of you who have supporting or \$3.00 memberships are getting a bargain.

This report would not be complete unless mention is made of the romance at Horticulture House during the year. Our editor married the assistant editor. After a few months, the assistant found that the requirements of home and garden made it necessary to give up the business position. Our loss is George's gain.

Each year more calls are made upon the Association and Horticulturist, George Kelly, for assistance in public service projects and talks. George is known to thousands of people throughout this region who listen to his spontaneous and lively discussions with Don Peach over Station KOA. Thank you Don and Station KOA for making this program possible.

George has also been the spark plug for the Rocky Mountain Horticulture Conference, whose sessions on March 25 and 26 had some excellent talent, as usual. This will be replaced in 1953 by the Shade Tree Conference scheduled for February 11-13.

Mrs. Alice Dalbey, a graduate of the University of Indiana, with a Master's degree from the University of Illinois, is now our editorial and advertising assistant. Mrs. Bernice Petersen has filled in at the desk time and again. She knows her gardens!

To complete our Horticulture House staff let me present our very

efficient secretary and treasurer, Mrs. Mildred Cook, whose records are informative and understandable; Mrs. Hughes and Mrs. Wharfield, assistant librarians.

The treasurer's report for 1952 will be given in the next issue of the Green Thumb. Suffice it to say here that we are holding our own, with a net worth, as of December 31, 1952 of \$5,469.35, which is slightly better than the previous year's record. Membership dues brought in \$7,948.

We are indeed grateful for the continued interest and support of Mrs. John Evans and extend our best wishes to Mr. and Mrs. Evans who are vacationing. Many other good friends have continued their patron and donor memberships and these sources of income make it possible for the Association to carry on its educational program in accordance with the objectives and purposes for which it was incorporated under the laws of the State of Colorado.

Congratulations to Robert More, Chairman, and other members of the Finance Committee who have so ably guided our financial policy.

The Look and Learn Garden tours conducted from July through August under the able chairmanship of Mrs. Paul L. Hastings were not only instructive—29 gardens, varying from the simple type of the small bungalow to those of large estates, were visited by a thousand or more persons, but the tours were profitable as well. They netted \$970.25 for the work of the Association.

Another hard working committee under the efficient leadership of our faithful Mrs. "B" (Mrs. Charlotte Barbour) arranged for the Antiques and Horribles and Plant auctions, which netted the Association \$1,211.20. We are especially grateful for the generous contributions of plant materials by members of the

Nurserymen's Association and a number of our seed dealers.

Next we come to the work of our Library Committee, led by our enthusiastic Mrs. Helen Fowler. I could cheer long and loud for this committee. Did you ever hear of a committee of sixty ladies? They meet monthly and discuss everything from how to use the Helen Fowler Library to the raising of the genus *hemerocallis*. I have been told that these ladies also have a lot of fun. Each month some valuable article is raffled off for the benefit of the Association. During the year 60 new volumes were added to the Library which now numbers about 1800 volumes. The Library fund, which is kept separate from administrative funds, totaled \$2,404 on December 31. The committee will have as a project for 1953 the preparation of a subject matter index for the Library.

We hail you, friend Helen. May you and your committee live long and prosper.

The membership of the Association was 2,403 on December 31. The membership committee under the energetic leadership of Mrs. Henry J. Conrad, with Mrs. Calvin Fisher as co-chairman, has done an outstanding job in interesting people in the Association. Mrs. R. M. Perry, Mrs. Frank McLister, Mrs. J. Kernan Weckbaugh, Mrs. Charlotte Barbour and others have concentrated on renewals. Special effort is made to enroll new members to take the place of those lost through natural turn over.

Time permits no more than a thank you to Herbert Gundell, chairman, and other members of the Program Committee, to Mrs. Timm and members of the Outdoor Activities Committee.

Our thanks to Mrs. H. M. Kingery, Mr. L. C. Shoemaker, Mrs. Vahna Broman, Mrs. Ralph Rickenbaugh

and others of the Publicity Committee.

The Herbarium Committee, with Mrs. Kalmbach as chairman, continued to add specimens to the Association's herbarium.

The Arboretum Committee which has sponsored the establishment of a Botanical Garden in Denver has fulfilled its objective, with the approval, by the Denver City Council and Mayor Quigg Newton of plans of the Denver Botanical Foundation. Much credit is due Mrs. John Evans for her far-sighted vision and backing of this project, to Milton J. Keegan for the many hours spent in drawing up the memorandum of agreement with the City of Denver, to S. R. DeBoer for the detailed plans for the development of the first unit in City Park, to Mrs. George Garrey, Dr. Shubert and other trustees of this Foundation.

The Forest Conservation Committee, with Dr. Moras L. Shubert as chairman, has been studying plans to rehabilitate a tract of state owned land to serve as a model of good land management.

For many years this Association and other groups have studied methods of handling Christmas trees so

as to prevent the waste of large numbers of unused trees and also to prevent denudation of watersheds. During the past Christmas season, 82 licenses were issued by the City of Denver to sell Christmas trees and there were about the same number in the adjacent suburban areas. Spot counts indicated that from 40,000 to 50,000 trees were unsold on Christmas eve.

The State Board of Forestry is unable to control the situation and feels that it must give up, unless authority is granted by the State Legislature for the Board to act.

At a meeting on January 26, held at the State Land Board Office, it was decided to sponsor a bill providing for the control of tree cutting on private land.

Mrs. Charles Enos, the energetic chairman of our State Parks and Roadside Improvement Committee will later tell of the status of this project.

And that, ladies and gentlemen, is a picture of what your Association has been doing during the past year. My sincere thanks for the fine help given by officers, directors, committee members and many others.

FINANCIAL REPORT FOR 1952

NET WORTH, as of January 1, 1952.....	\$5,344.06	
INCOME FOR THE YEAR:		
Memberships and dues.....	\$7,948.50	
Advertising in the Green Thumb.....	3,511.41	
Donations	4,905.48	
Benefits and miscellaneous income.....	2,421.04	
		\$18,786.43
EXPENSES:		
Printing the Green Thumb.....	\$9,038.99	
Salaries, Horticulture House, Office, etc.	9,622.15	18,661.14
INCREASE IN NET WORTH for the year 1952.....	\$ 125.29	125.29
NET WORTH as of December 31, 1952.....		\$5,469.35

VEGETABLES FOR OUR 1953 GARDEN

By LULA ROSE MORSE

WE OFTEN look back on our garden during the first year or two of our venture of producing vegetables for the table in summer, and winter as well. Urged by the powers that directed our efforts we must have worked on the theory that if a little was good more was better. Overestimating our capacity for beans, the neighbors had an ample supply. Swiss chard made many new friends, but two rows can produce an amazing quantity. Beets went the rounds of the neighborhood, buttered, "Harvarded" and pickled. Many expressed a decided preference for new peas and were disappointed, for peas and lima beans were two crops which we hoarded; both freeze well.

During two years we tried our hand at Irish potatoes, sweet potatoes, kohlrabi, cauliflower, brussels sprouts, water melon, peppers, many herbs, as well as cabbage, head lettuce, various kinds of squash, pumpkin, beside the standard vegetables. We had varying success, some were excellent but we discovered that two people can consume only a limited number of vegetables during any given week, and even the neighbors could not cope with the surplus squash.

Now we love our neighbors, but time, effort and garden space are limited. Knowing that the preparation of the plot was the basis for a good garden and that proper feeding, weeding, cultivating and watering were essential to good maintenance, we decided to confine our efforts to the quantity two people needed of their favorite vegetables and raise only the varieties preferred in the fresh and frozen state.

Six fundamentals are observed each

year which tend to produce a satisfactory garden:

1. Fresh seed from a reliable seed house.
2. Proven varieties for this climate.
3. Careful preparation of seedbed.
4. Proper slant for irrigation in trenches.
5. Staking and supporting as a preventive rather than a corrective measure.
6. Meticulous timing of harvest for freezing.

Having given up vegetables seldom used on the table and those of an experimental nature our seed order this year, as for several years past, will read:

BEANS

Burpee's Tender Pod (Green)
Burpee's Brittle Wax
Burpee's Best Pole Limas

BEETS

Detroit Dark Red, Short Top

CARROTS

*Burpee's Goldenheart

CORN

Golden Cross Bantam

CUCUMBER

Burpee's Hybrid

HERBS

Basil
Sweet Marjoram
Parsley
Sage is in as a perennial

LETTUCE

*Salad Bowl
Bronze Beauty

ONIONS

Sets for spring
Plants, Sweet Spanish, for winter

PEAS

Blue Bantam
Little Marvel

RADISH

*Cherry Belle

SQUASH

Early White Bush (Patty Pan)
Early Golden Summer Crookneck

SWISS CHARD

Fordhook Giant

TOMATO

Marglobe (red)
Jubilee (golden)

*Indicates a variety not tried before.



FOR OUR WATER-FOWL

HENRY H. ZEITZ, JR., proprietor of the famous Buckhorn Restaurant of Denver and successor to the late Henry H. Zeitz, Sr., wild game enthusiast has a most unusual avocation in which every bird lover will be interested.

Mr. Zeitz lives in the vicinity of Sloan's Lake and, following the pat-

tern of his father for many years, continues to feed hundreds of water fowl each day. Purely through his love for wild-life, Mr. Zeitz has borne the expense of this hobby and he has the birds so tame that they eat from his hands and large flocks of them fly in for this daily feeding.

A PROTEST AGAINST THE BURNING OF CHRISTMAS TREES

By LUCILE THURMON

ALTHOUGH it is too late to utilize the discarded Christmas trees this year, it is to be hoped that many will plan to do this, following our next yuletide season.

Christmas trees set up in the yard make an excellent shelter and feeding station for birds. The Home Garden magazine had a splendid article, in the December issue, concerning these possibilities. It explained just how to "decorate" the trees. Orange rings filled with suet, pieces of apple with the seeds, peanut butter inserted in the pine cones, strings of cranberries, walnut shells filled with seeds and suet or shelled peanuts, sunflowers, et cetera, are most suitable for use.

Or if one is not interested in feeding the birds, the branches from these trees are excellent for mulching plants

that need some winter protection (it doesn't pack too tightly, helps to hold moisture and protects from the sun). The needles may be stripped from the branches and scattered over fern-beds, or put around columbines, as well as digging them around in the soil of all acid loving plants. Also, the branches of the evergreen tree make a pretty spray for the cemetery lot, or can be used in the centerpiece arrangement for the home.

For years, Dr. E. C. Wharfield has collected discarded Christmas trees and has placed them in his yard for the protection of the birds. In the trees of a more bushy growth, where the birds congregate in large numbers, he sprinkles corn and seed for them around the base of the trees, during the cold winter months.

SPRINGTIME

By DR. E. C. WHARFIELD

THERE have been so many new houses constructed during the last few years that many of us are confronted with new problems which we find in common. These problems we may divide, for convenience, into those regarding the house itself and those pertaining to its surroundings—the yard. For a moment we shall turn our attention to the surroundings.

Within the city limits, one is commonly concerned with an area of limited proportions and size. When one moves outside these limits it is usually because he wants a little more space. Often it is because he wishes to be outdoors more, perhaps to experiment with growing things. Not only is it a fine avocation, but a real satisfaction to see that some of your efforts have produced results; as well as to recognize your mistakes and gain in knowledge. That is the fun of it!

It has always been my wish that we might find a location where we would have an unobstructed view of the mountain range. It seems unfortunate that all who live in Denver could not have that privilege, with a view that could be retained and not later obstructed. And so now we have it—and what a satisfaction it is to see the cloud formations and be able to watch the sunsets, many of which are so beautiful!

Once the desired location has been determined—whether within the city or otherwise—one's next thoughts are probably on the location of the house,

itself, in relation to the plot of ground selected. In this regard, one should bear in mind that in certain areas there are certain building restrictions, requirements, as well as the problems of gas connections, electricity, etc. These things, of course, should be thought of at an early date. Once the spotting of the house is decided upon, the next consideration is, probably, the proper GENERAL contouring of the ground (as it must subsequently be done). Proper drainage away from the house should always be borne in mind. If it is possible to have the water and gas connections made to the access point, that may well be done before the contouring is started, or at least, completed.

Let us now assume that the house is fully constructed, or so nearly so that there will be no more heavy trucks driven over the grounds. We must not forget that at this time we must plan for the placing of all trees, shrubs, flower-beds, rock gardens, parking area, drives, garbage access, drainage, and et cetera. Incidentally, with rainfall as infrequent as it is in this area, whatever may fall may be guided into flower beds—even from the down-spouts from the roof.

Undoubtedly the most outstanding things that we can plant are the trees. In this regard, we have many characteristics in the various types of trees which we should consider. What size will a tree ultimately be when it attains its full growth? Have we planned to so place it that it will not be too crowded later? All trees are at their best when they have ample spacing and light. Some trees will prosper best when they may gain the full benefit of the sunlight; others will thrive where the sun does not reach through-



out the day—as on the north or east side of the house.

In such locations, the moisture will be retained in the soil for a longer period. Some trees are well known to be more drought resistant and to tolerate the alkaline soil that is so common in this area. We have certain trees that we know will, undoubtedly, fail in this locality, because of disease—such as some of the poplars. We have many that thrive in a more moderate climate—such as the arbor vitae, which probably will not succeed here. We have some which are particularly hard to transplant because of their deeper root systems.

There are some of us who “cannot wait” for a tree to grow. We enjoy seeing our trees and watching their added stature each season. However, sometimes we cannot help wishing that we could be here fifty years from now, so that we could see how they have matured and given pleasure to others. Why not use every means to do so now, while we are here? Haven’t you often had the feeling that when our city grows larger and larger, it would be nice if those who want to move to the outskirts could find some trees already there? True, they need moisture to start and to thrive, but there are many that are able to do well with the minimum of moisture—such as the locusts and the hackberry.

In recent years there has been a commendable effort on the part of some states to plant trees along their federal highways. This practice certainly adds to the attractiveness of the landscape.

For the home-owner who does not wish to wait for all of his trees to grow “from scratch,” the local nurseries have larger trees to sell—as well as the younger ones more commonly planted. An evergreen, for instance (generally a tree of slower growth), gives a particularly attractive effect—

especially in winter. Again, the English Ivy gives a pleasant touch of green during the winter months, as does the Oregon Grape.

One method which has its advocates, is to alternate faster growing trees, such as the Chinese Elm, with others of slower growth (planning to later remove the less desirable ones). Then there may be some certain tree or trees with which one may try to experiment. Although we have learned that a certain tree is not apt to succeed in this general locality, it will bring an added pleasure if we manage to make our efforts successful. I have a Crimson King Maple which has a very beautiful deep red leaf. Since it was planted two years ago, it has grown well and I am in hopes that it will continue to do so for many years to come.

In talking to the various nurserymen, in and around Denver, I have found them to be very cooperative, for we have many things in common. I enjoy visiting their grounds and seeing what each one has. Perhaps I take a fancy to a certain type of tree or shrub and I decide I want one. Then I proceed to find out which nurseryman has what I feel is the best example of my particular choice. So much for the trees!

Our next friends are the shrubs—and there is a wide choice in this field. Again the ultimate height and spread must be considered. There are those shrubs, such as Redosier or Coral Dogwood; which have very attractive, reddish twigs throughout the winter. If they are placed near evergreens they make a beautiful combination, especially when the snow lies on the



ground. This family of shrubs gives one considerable choice as to color of twigs, flowers and berries. The viburnum family is another one in which we have a wide variety; many of which, thrive in this area.

Early last spring, my wife and I took a trip to Carlsbad, New Mexico. The Carlsbad Caverns are very much worth seeing; and adjacent to them, there has been set aside an area in which there are examples (labeled), of the local flora. In particular, there are many varieties of cacti and desert plants. We brought home a dozen types of small cacti—three to eight inches tall—for decoration within our home. I quite enjoyed visiting with the nurserymen there and, of course, had to bring some samples back to Colorado; among which were a *Pyracantha* that has evergreen leaves (and that has wintered all right so far), two English Lavenders for the rock garden (they have done well), and a gold leaf *Euonymus* (which did splendidly out of doors all summer but died when I transplanted it indoors for the winter).

When one takes a trip, why not enjoy seeing the things that grow well in other areas. Why not bring some home if only for experiment? It adds zest! We find as we go along that we have favorites among our trees, shrubs and flowers. One shrub that I rather like is the Blue Spirea (*Caryopteris*). It is a well proportioned shrub from three to six feet tall with a good supply of violet blue flowers, which remain rather late in the fall.

Another pleasant experience we have found, since we began building our home, has been in sharing experiences and garden specimens with our friends and neighbors. Many have said to us: "We have plenty of iris—or roses—or asters, etc., why don't you come over to get some as we have more than we want?" Of course

we have taken advantage of some of these opportunities, which merely means that one does not necessarily need to go to the expense he might have imagined. One of my friends had planted, a number of years ago, quite a variety of trees, among which were: Elms, Maples, Russianolives, Ponderosa Pines and Tamarisk. He said: "Come over and take what you wish." They averaged four feet in height. A fine start. One friend had a very nice Blue Spruce, ten feet tall. It, also, made a real contribution. Another gave us a six foot Blue Spruce. When it came to our rock garden, one fine friend came to our aid with a truck load of rocks, including some petrified wood, which they had gathered from almost every state in the union.

Another objective I have had, has been to attract the birds. Doubtless they can help to keep the "bugs" down. As soon as the trees, shrubs and other green things appeared, the variety of birds gradually increased. Throughout the winter, a considerable number of house(?) finches have enjoyed the protection of the evergreen trees. Meadow larks have been with us daily, and with the added attraction of a regular distribution of corn in our crested wheat, we have succeeded in enjoying the early morning and evening visits of a considerable number of pheasants. I look forward to Spring and the advent of the other birds in their migrations and visitations. The robins nested here last summer, the vesper sparrows bring their cheery songs and the meadow larks are always here.

Soon, I will be unwrapping the burlap from the trees; a precaution which tends to prevent winter-kill. The changes which we have planned during the winter will soon be transplanted into action. Then, the miracle that is Spring will be here!

PERENNIALS

By PATRICIA WHARFIELD

MANY gardeners feel that the flower bed of perennials is the most satisfactory because it comes up each year and does not require as much time and work as the annual flowers. However, we sooner or later learn that no perennial border will continue to look well or flourish unless it gets the necessary attention. Certain types of fast growers, such as the shasta daisies or the iris must be divided every few years to prevent them from growing too thick and smothering out other varieties that are less hardy.

It will be helpful to those who are wishing to gain practical ideas for their gardens, to quote from George Kelly's Garden Book. He says:

"There are many perennials that may be grown under almost any conditions. When planning a border it is well to consider ultimate height of the plant, season of bloom, hardiness and preference for sun, soil and water. Heading the list of tall perennials are the Delphiniums. Other perennials that are tall and quite hardy, include: Fall Asters, Goldenrods, Goldenglow, Blue Salvia, and Hollyhocks. Most of the common perennials come in the medium height class and are represented by such plants as: Peonies, Perennial Phlox, and Shasta Daisies. Also in the medium height class and of hardy nature are: Coreopsis, Columbine, Chrysanthemums, Painted Daisies, Oriental Poppies, and Day Lilies. There are not many low growing perennials until one gets into the trailing or rock garden varieties. Some of the taller low things suitable for the average garden, include: Dwarf Dianthus, Blue Flax, Trailing Phlox, and Cushion 'Mums'.

"Bulbs are generally thought of as those plants ranging from Tulips to

Dahlias. The fall planted, spring flowering bulbs are the most popular, probably. These include: the Tulip, Narcissus, Hyacinths, Crocus, and such. Tulips do very well in much of the Rocky Mountain area if planted where they may have protection from excessive drought and sun. They should be set in the ground a little deeper than in the usual directions. Some of the Narcissus seem hardy enough but others require a protected place. Dahlias, Gladiolus, Lilies, Iris and Hemerocallis have all attracted their share of fanciers who have named hundreds of new varieties."

There will be those who will want to plan a perennial garden that is predominately blue in color. With a little artistry and care, this can be made very effective. However, Helen Fowler has cautioned that an all blue garden is not as attractive as one that is interspersed with a little color. Splashes of scarlet, yellow and orange can be added with care.

Avoid blooms having a purplish or lavender hue. Perhaps the best known and admired blue flowers are the Delphiniums. Other satisfactory flowers are: Echinops (Globethistle), Eryngium (Seaholly), Phlox (Caroline Vandenberg and Maid Marion), Baptisia australis, Liatris (Kansas Gayflower) — must be planted in light soil—Flax (Linum), Campanula, Canterbury Bells (single, double and cup and saucer), Veronica, Scilla (early bulbs), and Blue Primula (requires shade).



POETRY IN WROUGHT IRON

By JACK HARENBURG



IN driving through our residential areas, I am constantly struck with the monotonous aspect of the homes I pass. The lawns are beautiful, the trees and shrubs trimmed, the foundation planting in harmony with the house. And there is block after block of well-cared-for monotony; block after block of homes lacking that *personalized* center of interest so important to individualized homes.

Your front door is the focal point of welcome through which you greet your friends. It is the most important feature of your home and as such should accentuate and express your individual taste.

There is no more striking way to do this than through one of the modern wrought iron screen doors which have a character and charm impossible to reproduce in any other medium.

Wrought iron is practically indestructible, requiring little care, and lends itself to many architectural styles.

Screen doors are only one of the many uses to which this versatile material may be put. It can be used in the garden in the form of a gate, or as a garden lamp to mark your walk entrance, or as a graceful plant bracket. Each can be made into many interesting designs of flowers, or graceful leaves, and will help to give a feeling of permanence to the ever-changing landscape. It can be used for casual ornamentation or as a dominant feature of your garden.

Personalize your gate with designs of broad leaves, a circle of flowers, or suggestions that you see in your own garden.

Individualized screen doors not only enhance the beauty of your home, but bring the feeling of your garden indoors.



Graceful wall brackets can ornament the wall space where plants refuse to grow.

Your garden lamp can be a point of interest designed to be in keeping with home and garden.

As described in these drawings, your fireplace hearth can carry the thought of flowers, birds and butterflies, but must be in keeping with your interior decorating—and it can even be designed to match or compliment individual parts of your decorating scheme, such as your draperies.

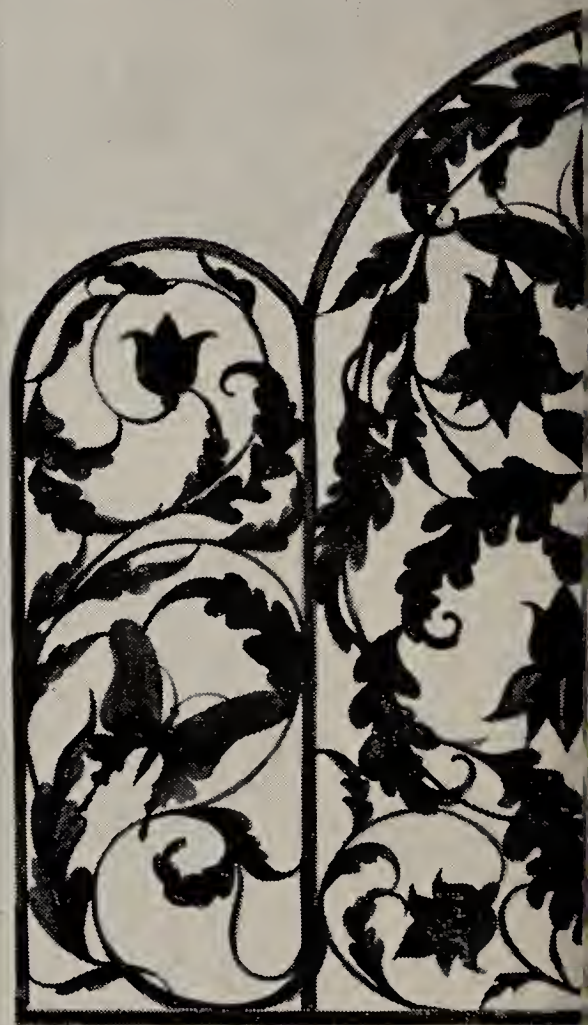


Jack H



Jack H







ONE ROUND OF THE DINOSAUR BATTLE WON

THE picture above shows one of the spectacular spots in the Dinosaur National Monument in the northwest corner of the state. It is an area of steep canyons, wild rushing water and unspoiled wilderness. The purpose in setting it aside as a National Monument was to keep it unspoiled for those who enjoy the works of Nature and their descendents who follow them. Unless a few of us have the foresight to preserve some of these natural areas our children will have no such places to go for their recreation and inspiration.

The Secretary of the Interior has recently recommended that other dams than those proposed to be built in the Monument be built first and that this

location be given further study. On the other hand the present Congress is being urged by those who have selfish interests there to start the Echo Park and Split Mountain Dams at once. If this ever comes up in Congress we must all be prepared to bombard them with an avalanche of protest.

Why not drive up and see this country next spring, then you will know better why all who have seen it are willing to fight to preserve it.

NOW IS THE TIME FOR ALL GOOD MEN TO ACT

Enclosed is a copy of a letter recently received from the executive secretary of the National Parks Association. We feel that this is very important and that you should know of the situation at once. We believe that every conservation minded person and lover of beauty should lose no time in writing the legislators indicated.

Beauty and Wilderness once destroyed can never be replaced and at the present rate we will have too few recreation spots left for our grandchildren to enjoy. We can not afford to let too many such places get away from us.

The preservation of the majestic canyons of the Yampa and Green Rivers now in the Dinosaur Monument has come to be a criterion to conservation minded people of all things that should be preserved. If we lose here it will be increasingly more difficult to preserve other valuable areas.

While the investigation of alternate sites for dams is going on will be a good time to change the Monument to Park status and eliminate the most serious threats to its existence.

NATIONAL PARKS ASSOCIATION

1840 MINTWOOD PLACE, N. W.

WASHINGTON 9, D. C.

News Release Number 70

February 2, 1953

NATIONAL PARK STATUS FOR DINOSAUR MONUMENT

The National Parks Association strongly endorses Congressman Leroy Johnson's bill, H. R. 1037, establishing Dinosaur National Monument as the Green River Canyons National Park. A copy of the bill is on the other side.

By Act of Congress, this legislation would give the fullest possible protection to the magnificent canyons of the Green and Yampa rivers. All lands now within the monument would be given national park status, except 16 sections at the extreme northern end. This is the site of the proposed Brown's Park project, involving a dam at the Gate of Lodore, which would create a reservoir northward beyond the boundary on the Green River. The 1938 proclamation, which added the great canyons to the monument, provided that the Brown's Park project might be built, and this agreement is recognized in the present bill. Several years ago, the Bureau of Reclamation abandoned its plans to build this project; and unless it is built within a given number of years (to be decided in committee) these lands may be added to the park. The bill restricts the size of the park, which may not be larger than the present monument.

Section 3 renders void any reservations or withdrawals of any kind that would be applicable to the lands included in the park. This spells out the intent that such structures as Echo Park and Split Mountain dams shall not be built. The President is given authority to revise the boundaries, in order to correct certain lines along the Yampa. In 1936, the Park Service agreed not to interfere with grazing rights there until proper boundary adjustments had been made, and its studies have not been completed.

Enactment of this legislation will not injure the local communities, or mean they cannot have the water benefits they hope for. There are alternative ways to store the water and provide for its use without invading the monument, and at less expense. Secretary of the Interior Chapman recommended changes in the sequence of construction of other dams to achieve this end. The superb canyons of the Green and Yampa rivers are fully qualified for national park status. There is no doubt they will be forever ruined if they are flooded by Echo Park and Split Mountain dams. America must not allow one of its outstanding treasures to be destroyed.

Members are urged to express their views *at once* to the Honorable A. L. Miller, Chairman, Committee on Interior and Insular Affairs, U. S. House of Representatives, Washington 25, D. C., to Senator Hugh Butler, Chairman, Committee on Interior and Insular Affairs, U. S. Senate, and to Congressman Leroy Johnson, U. S. House of Representatives. Copies of letters should be sent to their own Representatives in Congress, and to the Secretary of the Interior. Hearings will probably be held in March, and the Committees should know how the public views this legislation before that time.

FRED M. PACKARD

Executive Secretary

A BILL

To establish the Green River Canyons National Park, in the States of Colorado and Utah, from a portion of the Dinosaur National Monument, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to preserve as a national park for the benefit and inspiration of the people the magnificent scenery as well as the outstanding scientific features of the area within Dinosaur National Monument, a portion of that monument, as prescribed in section 2 of this Act, is hereby established as the Green River Canyons National Park.

Sec. 2. Such national park shall comprise the area now within the Dinosaur National Monument, with the exception of the following monument lands: Township 9 north, range 102 west, sections 16 to 21, and 28 to 33, inclusive (partly unsurveyed); township 9 north, range 103 west, sections 13, 24, 25, and 26; sixth principal meridian, Colorado.

The area of the national park, as established or as revised pursuant to this Act, shall be no greater than the area of the former Dinosaur National Monument; and, within that limitation, the President is authorized, by his proclamation or proclamations, to adjust the boundaries of the national park by the exclusion from or by the addition to the park of such lands as he may deem advisable: *Provided*, That any of the above-described monument lands in township 9 north, range 102 west, and township 9 north, range 103 west, may be included in the park by proclamation of the President after a-year period from the approval of this Act if during that period no use of such lands for the construction or development of a reclamation, hydroelectric power, or other project for the storage, regulation, or control of water has been established that is applicable to such lands.

Sec. 3. The Green River Canyons National Park shall supersede the Dinosaur National Monument, which is hereby abolished. Any reservations or withdrawals of any kind that otherwise would have been applicable to the lands now or hereafter included within the park pursuant to this Act, are void with respect to such lands upon their inclusion in the park.

The national park shall be administered by the Secretary of the Interior in accordance with the policies established by the basic national park statute of August 25, 1916 (39 Stat. 535; 16 U.S.C., 1946 edition, secs. 1-3), as amended and supplemented.



Jack H.



Jack H.



Jack H.



BRING THE SPRING INDOORS

By HELEN MARSH ZEINER

THIS is the time of year when spring is in the air, and all garden lovers are filled with a great impatience to see the first unfurling leaves, the first opening flowers. We look about indoors, and all the beautiful dried arrangements of winter seem drab, and even the house plants we so admired for months seem to belong to the winter. Will spring never come? Yes, of course it will, but we can hasten its coming by creating a bit of spring of our own indoors.

One of the easiest ways to bring the spring into our homes is to force a few twigs for flowers or merely for the pleasure of seeing the delicate green leaves unfurl and expand. February and March are generally considered the best months for such forcing. The nearer the time to natural blooming, the quicker and easier the twig is to force. The branches should be cut with a clean slanting cut. Those two to three feet long seem to give the best results. Smaller twigs sometimes dry out too soon. For twigs hard to force, or those cut very early, wrap in cloth and submerge in warm water overnight. Then

unwrap and leave in deep water in a dark warm room, spraying or dipping the whole branch frequently. As soon as color begins to show in the buds, bring the twigs to the light and watch the flowers open with all their delicate beauty.

If you are forcing twigs close to the time of their natural blooming, or if they are known to be easy to force, submerge in water over night, and then bring directly to your living room. Twigs which are being forced for leaves alone can generally be treated this way.

It takes such a few branches to make an interesting arrangement—sometimes one gnarled branch is enough, and with three you can almost always create a lovely bit of spring. You may be surprised at the interesting possibilities in your own yard. Among the easiest to force are pussy willow; forsythia or golden bell; plums; cherries; flowering quince; service berry or shadbush; silver maple with its fat little flower buds; sumac, horse chestnut or buckeye, and walnut, all of which have interesting leaves and heavy stems ideal for certain types of arrangements; almost any poplar or cottonwood; and birch or alder, whose pendulous catkins gradually elongate and become yellow with pollen.

Somewhat slower and more difficult, but so much fun to try, are Japanese barberry, bridal wreath, box elder, wild gooseberry, hawthorn. Experiment with others, too—you will find this a very incomplete list.

Spring bulbs forced into early bloom are one of the most delightful ways to bring the spring indoors. With a bit of foresight, one can have bulbs in bloom from Christmas until they are flowering outdoors—and





what could be more spring-like than a lovely narcissus blooming among your house plants?

There are a few general principles to follow—choose healthy bulbs, firm and heavy for their size; allow an adequate period for root development in the dark and at a low temperature—about 40° to 45° is ideal; when bringing the bulbs out for top development do not permit too rapid a rise in temperature or too high a temperature. Blasting of flowers usually indicates that the bulb was grown where it was too warm.

If you are an amateur, you will probably find water culture easier and more satisfactory than soil culture. Also, water culture is quicker. The paper white narcissus, Chinese sacred lily, narcissus *Soleil d'Or* (a delightful yellow variety), and hyacinth all give good results in water. The first three are usually planted in bowls with coarse gravel and a little charcoal; the hyacinth is usually planted in a special bulb glass. Charcoal should be put in the water. The water should just touch the base of the bulb until roots start, when the level may be lowered to just below the base of the bulb. The bulbs should be placed in a dark, cool place such as a fruit cellar until the roots are well developed, then they should be brought to a cool but light part of

the basement until the tops turn green, when they may be brought to the warmer part of the house for flower development. Choose a relatively cool spot, for too high a temperature may cause excessive top growth and few if any flowers. The narcissi will bloom in about 6 to 8 weeks from the time of planting; the hyacinth will take about 6 weeks for good root development, and then two or three more for blooming.

Many early flowering varieties of bulbs lend themselves to forcing in soil. Try some of these: hyacinth, tulips, daffodils, crocus, grape hyacinth, *Chionodoxa* or glory-of-the-snow, fritillaria, snow drop or *Galanthus*, *Leucojum* or snow flakes, scilla. Plant in pots or bulb pans with good drainage in a rich, moderately light soil. The bulbs should be covered except for the hyacinth, which is often potted so that half of the bulb is above the soil. Now the well-watered pots can be stored in the basement at about 40°. They should be placed on a layer of soil or moist sand, covered with straw and a piece of old rug or several layers of burlap. They may need occasional watering.



Leave them at least 6 to 8 weeks for root development, and then remove a pot at a time as needed for a series of bloom.

Root development may also (and probably preferably) take place outside in a hot bed or trench. Set the pots on a layer of sand, ashes, or cinders. Fill in between the pots with sand or straw, cover with a 2 to 3 inch layer of mulch and several inches of sand. Now cover with a board or brush. As with basement storage, leave 6 to 8 weeks and then bring in as needed. In both cases, bring from cool, dark storage to a cool, light place in the basement until the tops take on a green color, then bring them into your living room.

Hyacinths usually bloom in 6 weeks after they are brought indoors; tulips 4 to 6 weeks; daffodils 4 to 8 weeks.

The lily-of-the-valley gives quick results. Buy pips—those from your garden are usually a disappointment. Pot them in sphagnum or sand, put them in a dark place until the flower stalks appear, usually in two or three weeks, then bring them to the light.

If you have started no bulbs for this year, and you have grape hyacinths in your garden, dig a few with a good ball of soil so as to disturb the roots as little as possible, put them in the cool but light basement for a few days until growth starts, then bring them to the warmer living room. Their grass-like foliage and little blue flowers are real harbingers of spring, and you will be surprised to see how rapidly they develop in the warmth of your home.

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A WORD OF WARNING

By ARMIN BARTELDES

Krilium and other soil conditioners are excellent when worked into the bare soil. They should not be used on established lawns as they will seal up the soil and do more harm than good.

There will soon appear on the market several fertilizers with soil conditioners added. It will be all right to use these in a garden or when making a new lawn but do not use them on any established turf.



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NEW COMPOST ACCELERATORS

By E. G. BENNISON

HOW often have you looked longingly at the rich leaf mold in the forests and wished you had a load in your garden?

It is possible to make your own leaf mold economically. Simply pile up all the leaves, garden waste, weeds, kitchen waste, straw, poultry manure and sawdust in an odd corner of the garden. Cover with a thin layer of soil and sprinkle with a dilute solution of one of the new compost accelerators. Then sit back and await results.

It is not even necessary to dig a pit or turn the pile over. No chemicals are added.

Millions of harmless bacteria set to work to decompose the organic matter and turn it into humus-laden compost.

The process of decay is quite inoffensive and in a few months the compost is available for use.

It may be dug into the flower-beds in Spring and will act like well-rotted stable manure. The decomposition will have produced enough heat to cause any weed seeds to germinate. These are then choked in the pile and the final compost is free of weeds.

The compost may also be applied as a mulch for rose-beds or by spreading a thin layer half an inch thick it will work wonders on the lawn.

The bacteria used in the accelerators are quite harmless to animals and plants. They are effective in reducing the incidence of plant diseases and so promote healthy growth in the plants.

The mixture of bacteria in the new accelerators is capable of fixing nitrogen from the atmosphere. This is then combined by the remaining bacteria with the organic matter present and converts the sugars, cellulose and lignin into simpler organic substances which can be easily assimilated.

The simple organic by-products are loosely referred to as humus, a vital constituent of soil which causes the soil to show a marked increase in fertility, an improvement in physical condition and greater moisture-retaining power.

It has also been found that these bacteria concentrates will remove objectionable odors from septic tanks, and prove a blessing to country dwellers. City dwellers also benefit, as exemplified by one Californian city which converts 100 tons of city waste per day into excellent fertilizer by the use of a bacteria concentrate.

It seems likely that the organic depletion of our natural resources can be overcome by intelligently applying the scientific knowledge gained as a result of years of experiment.

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A MODERN WAY TO START SEEDS

The following story about the practical use of a new material should be of interest to all gardeners.—Ed.

START your seeds in horticultural vermiculite this year. You'll find that germination is much faster and in greater percentage, particularly small seeds and those less easily germinated. Your seedlings will also grow a dense mass of hair roots that can be transplanted intact, reducing the shock of transplanting. You'll eliminate a good deal of drudgery, too. A 2½ cubic foot bag of vermiculite weighs only about 15 pounds, compared with 250 pounds for an equal volume of sand. And neither screening nor sterilizing is necessary. Just pour the material from the bag into the flats or pots.

A thorough watering with half-strength nutrient solution will supply enough stored moisture and food to carry the seedling past the true-leaf stage.

When you sow very small seed, you want to sift out some of the fines from the vermiculite to use as covering. Or you can cover your containers with a piece of burlap, instead of covering the seed itself.

Be careful not to over-water, because this would replace vital trapped oxygen and make it hard for the roots to breathe.

Horticultural vermiculite is inert and contains no plant food. So water

with a nutrient solution, and syringe with plain water afterwards to wash the food off the leaflets.

If you haven't time or don't want to transplant your seedlings in the true-leaf stage, place about two inches of a balanced transplanting soil mixture (replace sand with vermiculite) in the bottom of the germinating container. Cover with one-half to three-quarters of an inch of horticultural vermiculite on the surface. The seed will germinate readily, and the roots will reach down into the soil for nourishment. This method makes it possible to delay transplanting until a convenient opportunity, within a reasonable period, presents itself.

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FROM HELEN FOWLER'S GARDEN NOTEBOOK

WHEN shall I start to sow seeds?

A good definite signal for it is at the time of the expanding of the leaves of the maple trees.

What About the Lawn When April Rolls Around?

The lawn should be enriched by a top-dressing, which will furnish plant food and at the same time, give a little more covering to the grass roots. Bone meal and wood ashes are good for the former, but for the latter use garden humus or peat moss. If reseeding of the lawn is necessary, get at it early—remember grass likes plenty of moisture while it is sprouting and if it is to last out the summer, it needs time to develop well before the advent of hot weather.

Pruning Again

Remember that all spring-flowering shrubs produce their flowers on the growth of the previous year, and the time to prune is immediately after flowering, cutting out the shoots that have just produced the flowers.

Hydrangea A. G.

This fine plant offers light and brilliance in the garden from August on to the heavy frost. Since it flowers on the new season's growth it can be cut down any time during the winter but *before* new growth starts, in order to keep it within bounds. This pruning also makes larger heads of bloom. There is a *Hydrangea p. g.* (*paniculata grandiflora*), but it in no way compares with *Hydrangea arborescens grandiflora* (a. g.), as a garden shrub-like plant.

The Christmas Rose

Many requests come in for a description of the Christmas Rose (*Helleborus niger*). We often grow the

black Hellebore, the Christmas Rose for its very early bloom. It comes even before the snowdrops and crocuses and is often forced for Christmas bloom. Since it is slow to propagate, the plant is fairly expensive to buy.

Hellebore is a dwarf evergreen plant with fine large white or pale-rose sepals the petals being very small and mixed with the yellow stamens. It is found on the meadows of Central Europe.

The plant has been employed in medicine since the time of the ancient Greeks in the treatment of gout, epilepsy, paralysis and insanity. Horace says in one of his satires, that "the world is like a great asylum with four classes of madmen. By far the largest quantity of hellebore should be administered to misers" for the avaricious are the most numerous class of the insane. Hippocrates used it as an ointment and Virgil mentions it in his *Gregorics*. We read of it also, in Spencer's "Faerie Queene."

The plant was widely used in the middle ages for dropsy and jaundice and much later, we read, by cottagers in domestic medicine although highly toxic, overdoses often proving fatal. In spite of all the above, it is most beautiful to look upon.

Have you a space in a little shade where you would like to plant something pretty? Then plant Myrtle and the Lead plant together. Vinca flowers in the early year, while all the time the Plumbago is preparing its brilliant coloring for the autumn. Blue blossoms from April through September.—H. F.

HELPFUL IDEAS FOR THE GARDENER

By PATRICIA WHARFIELD

PERHAPS you have had flowers or shrubs that did not do as well as you had hoped. Most of us have a corner in the yard which could be used as an "orphanage" for these waifs. I have been surprised to see what they have done for themselves, at times. As a result, the corner itself becomes a green asset to draw from when occasions arise. When one wishes a plant for some special spot in the yard, he is likely to find that one of his waifs has unexpectedly developed and will fill the need quite satisfactorily.

* *

In planting new trees, many beginners will raise the dirt in a circle around the base of the trees to insure a better supply of water for the roots. We have discovered that it is better to plant the trees a little deeper and have a depression below the level of the surrounding ground, in order to avoid repeated rebuilding of the circles around the trees.

* *

In planting a new lawn, one usually finds that there are a few spots in which the grass has not done well. If one will reserve a space—say ten feet square—in the garden, and plant that

area to grass, he will provide himself with some extra turf to place in the bare spots of the lawn.

* *

Does it seem that you never find time to do some of the things you want to accomplish around your yard? Help is scarce and very expensive. With a little inquiry, you may find that there is a school boy living close by who would be glad to earn some extra money. There are many things that even a quite young boy can do to help in the garden and yard. The real joy of gardening comes, not alone from watching plants grow and beautify your yard, but also from using good judgment and not allowing yourself to become too tired.

* *

There are times when a tree does not take hold and grow as we had wished. But the suckers at the base do seem to be alive, and the season may be too advanced to plant another, to replace it. Simply saw the tree off short and allow the suckers to become a green shrub for the balance of the season. The following spring, you can plant a new tree, but in the meantime, you have had the leafy greenery in your yard.



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To attract the birds, one may buy miscellaneous and inexpensive seeds at any of our seed stores. But it is better to have a definite place to feed them so that the seeds that germinate will not be spread indiscriminately.

* *

For those who love the outdoors and the growing things, there are convenient pocket-sized books to describe the trees and flowers. In one season, while fishing and not going out of his way to discover them, my husband was able to catalogue over two hundred varieties of wild flowers.

* *

An interesting bird among our migrants is the shrike. If you find a beetle or a grub impaled upon a thorn in your Russian Olive or Locust tree, he has paid you a visit, probably.

* *

With spring just around the corner, our minds will be filled with ideas and plans for beautifying our yards and gardens. At this time, before the real labor begins, why do not all of our readers utilize our excellent Library at Horticultural House? Do you know that it is one of the finest of

its kind in the entire country? The Library Committee, headed by our own most capable Helen Fowler, has made available to each of you, hundreds of valuable books on every phase of horticulture and would welcome all of you to make use of them. Come in and browse through the splendid books and magazines; and better still, check out some of them that interest you most, for further perusal in your own home. While visiting the library, you will have an opportunity to talk over any of your gardening problems with George Kelly. He is not only enthusiastic and genuinely interested in helping everyone but is recognized as being one of the top men in the United States in this field.

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DISH GARDENS AND PLANTER BOXES

By PETER COLLINS

Everyone agrees that any one of a variety of green plants gives life and individuality to the home. Something growing seems to take one's home out of the category of just being a house. To many, a beautiful green plant, well tended and appropriately placed, surpasses an expensive picture, an exquisite piece of bric-a-brac, cut glass, fine china, silver, or hanging tapestry in its effect upon a room.

To those who have the taste and a flare for interior decoration, both Green Plants and Dish Gardens can be made to play a very important part in bringing restful beauty and color to "picture-corners" of a room. Great pleasure can be found in watching the plants grow and the pride that comes from caring for them.

An attractive arrangement for any kind of planting for the interior of a home, is to place them in front of mirrors, on small tables in focal points

of the room, on coffee tables, on wall shelves and even in bathrooms and kitchens. A most effective method is to plant them along staircases and landings.

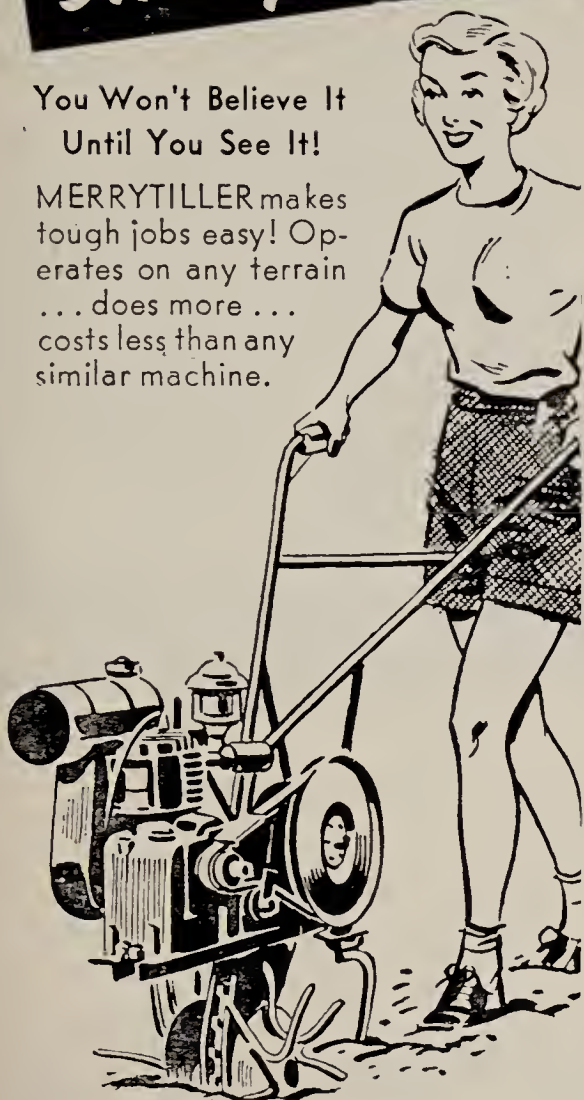
One of the most popular ways of bringing green plants into the interior of a home is through the use of a built-in planter box. If the room has plenty of sunlight, the box may be placed in any corner of the room or, as in the more modern interiors, it is frequently found in the center of the room. Most often these boxes are made from a sort of stone, depending upon the style of interior decoration of the house. Perhaps the most popular placement for a planter box is in front of a window, preferably a large one where the sun reaches it much of the day. The most popular plantings for this kind of a planter box are: *Ficus Pandurata*, *Philodendron Dubia*, *Hastatum*, and *Dracaena*.



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SEED IS BIRD FEED

When you clean your garden house, or the shelves where garden supplies are stored, save old vegetable and flower seed for the birds. Most gardeners have a quantity of seed left over and a few even harvest seed.

In the dead of winter when natural food becomes scarce or is covered with snow, you can make the birds happy. Many small vegetable and flower seeds are bird food luxuries. The larger seeds can be cracked with a food chopper. Mix the seeds and store them in a can with a tight lid. Label the can and keep it handy, suggests Charles M. Drage, horticulturist for the Colorado A & M Extension Service.

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ANNUALS

By PATRICIA WHARFIELD

IT IS interesting to every gardener in this region to note the many new plant introductions for 1953. No annual was considered worthy of the gold medal by the judges for the all-American selections for this year, but the Royal Carpet Alyssum was awarded the silver medal and Comanche Petunia, the bronze medal.

We understand that the Royal Carpet is the first new alyssum to appear in twelve years. This is a beautiful low growing plant that spreads over the ground and makes a brilliant covering of purple blossoms. It is particularly advantageous for rock gardens, and for borders for the flower beds. It spreads rapidly and never grows higher than two inches. It is very fragrant and lasts well into the fall.

The Comanche Petunia is rich in color and develops into large strong

plants. This type of petunia is most satisfactory because it blooms profusely and is easy to grow.

The middle of March is the time to plant Sweet Peas, also seeds of the self seeding annuals such as Larkspur, Calendulas, Cosmos, Bachelor Buttons and Marigolds, providing the ground is not frozen.

No garden is complete without some annuals, for the best planned perennial borders would look bare without them. Formal beds of annuals can be most attractive if placed in appropriate places. There is a great variety from which to choose, but the ones that receive the most favor in our particular locality include: Zinnias, Petunias, Marigolds, Cosmos, Calendulas, Nigella, Nasturtiums, Poppies, and Balsam. The first safe date to put out tender annuals in this area is about June first.



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It answers at once any question

the youngsters might have, also, in words and pictures.

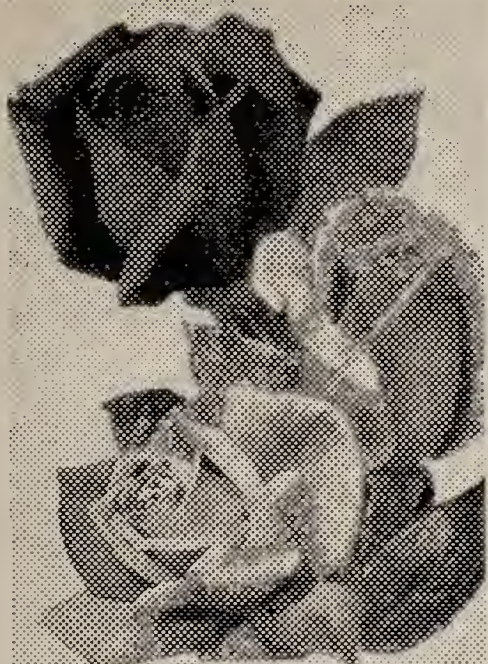
I just received word through the mail this Atlas is a recent book dividend given to the new joiners of the Book of the Month Club. It's worth considering if you propose to join the club. When you thumb through it, you will appreciate its full value.

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MARCH GARDENING

ANYTHING in the way of weather can happen in March, so be prepared to either work in the garden or in the house. Between storms, when the ground is not frozen or too wet, is a good time to transplant any trees, shrubs or perennials that need to be moved or to plant new stock from the nurseryman.

If nursery stock comes in during bad weather it can be kept for days in good condition by keeping the roots moist and opening up the tops to the air. If the tops, especially in the case of roses, appear dry and shriveled, they may often be revived by covering with moist soil or peat for a few days. If this material cannot be heeled in outdoors, it should be kept in as cool and moist a place as possible.

Traditionally sweet peas are planted on St. Patrick's day. I doubt if the seed would care if they were in the soil a few days sooner or later, but they do like to be planted at about this time to allow them to get their roots down early in cool soil. Some of the self-seeding annuals like Larkspur, Bachelor Buttons and Cosmos might also be seeded in the ground.

The most thrilling of all garden activities will be missed unless you start at least a few seeds. The developing of these dormant bits of life into blooming plants is the perennial miracle that renews our faith in the rightness of things. Start in a pot or flat in the house, in a small hot bed heated by an automatic electric cable, or they may be grown in the basement entirely under fluorescent lights.

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When the weather is good there are many chores needing to be done. Plots where annual flowers or vegetables are to be planted can be spaded up and made ready. Mulching and improving the soil with fertilizer can be done now. Soil in all locations should be checked for moisture content and a good soaking given where necessary.

Probably the most important job for this season is to check the plants which might have scale insects and make arrangements to have them sprayed at the proper time (when the weather is warm and no wind). Elm, Ash and Maple trees should be examined for scale. Cotoneaster, Lilac and Euonymus shrubs are also frequently infested with scale. Most evergreens now grown under cultivation are liable to damage from spider mites, and these are partially controlled by a suitable dormant spray. The tip-galls on spruce are becoming more and more damaging, and these may be eliminated by dormant sprays. An oil emulsion is usually used for dormant spraying on deciduous trees, but lime-sulphur has been found safer for evergreens. To be effective these sprays must be applied at the proper concentration, and time, by skilled operators.

For the benefit of new home owners it might be well to review some of the most useful plants to start with in landscaping a small home. For difficult places the Honeylocust, Green Ash, Hackberry, Russianolive and Soft Maple are still valuable trees. Where more care can be given the Lindens, Oaks, Hard Maples, Buckeyes or Kentucky Coffeetree may be planted. More of the smaller scale trees should be used, such as some of the Hawthorns, Crabapples, Goldenraintree or Mountainash.

Good tall shrubs include many species of Viburnum, Honeysuckle, Mockorange, Lilac and Privet. Typical of the medium-sized shrubs are the Spireas, Cotoneasters, Flowering Almond, Currants and dwarf kinds of Honeysuckle, Mockorange and Ninebark. Low shrubs are represented by the Barberries, Cinquefoil, Wild Roses, Snowberries and spreading types of Spirea and Privet.

Most of the common perennials advertised will do well here, if they can tolerate our alkaline soil. Since the tops die down each year they do not have the winterkill that woody plants do. Our chief concern with growing annuals is our short season and the difficulty in starting small seed under irrigation. Seeds of annuals are generally started indoors, and set out after danger of frost is past, as well started plants which will bloom soon.

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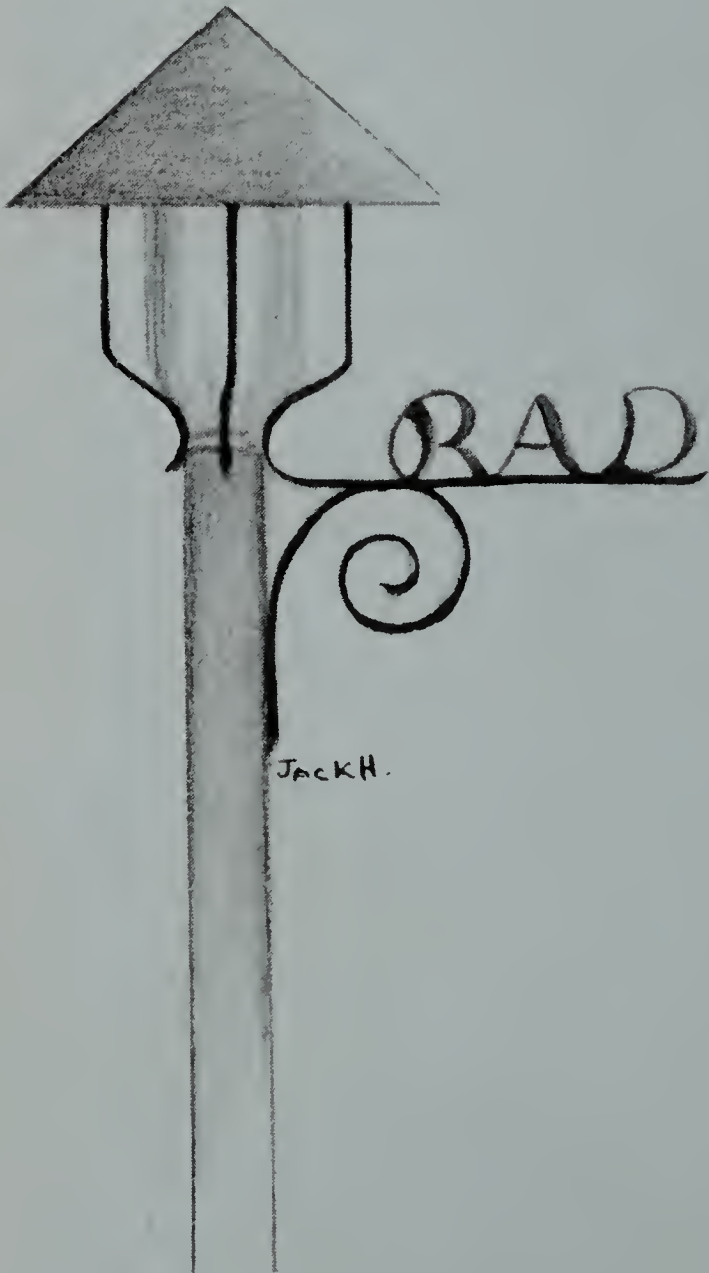
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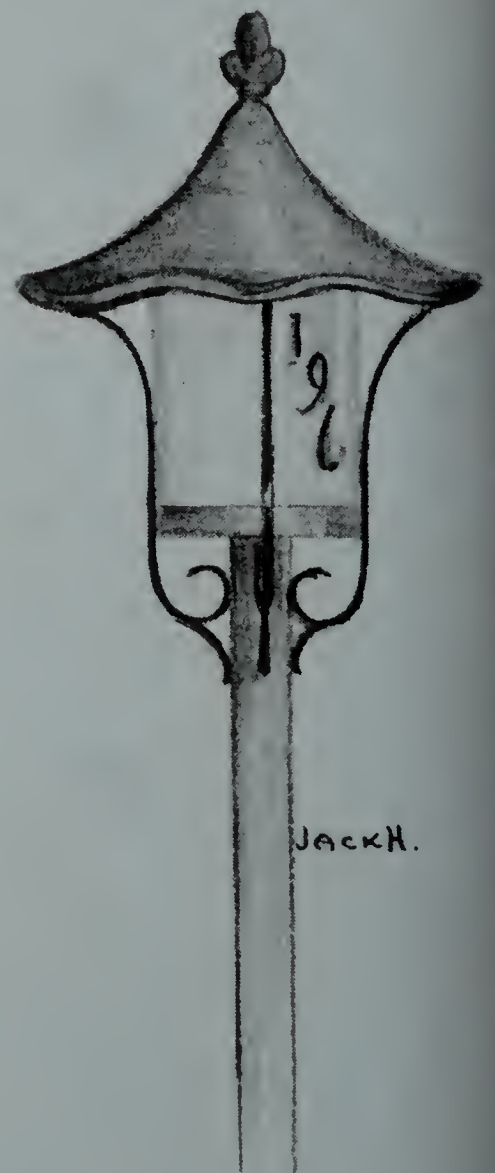
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The Green Thumb

COLORADO'S GARDEN MAGAZINE



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The Green Thumb

Vol. 10

APRIL, 1953

No. 4

JEFFERSON COUNTY ISSUE

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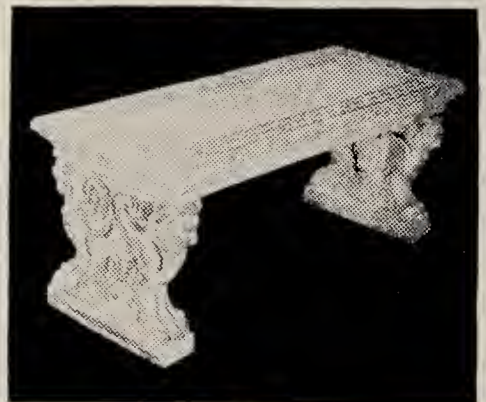
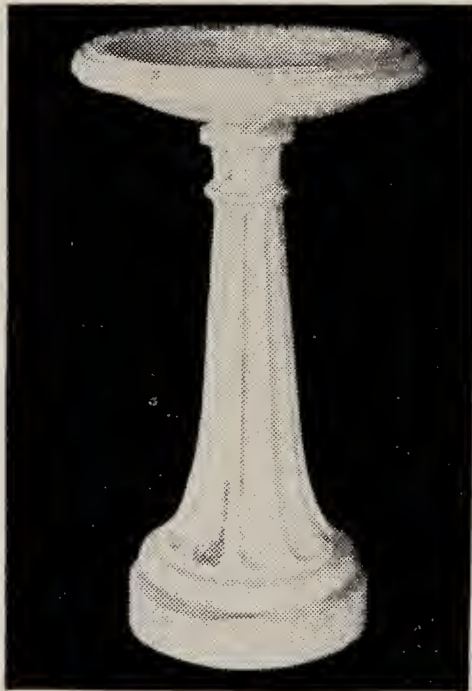
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Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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 Editor.....George W. Kelly

APRIL SCHEDULE

- April 5, Easter Sunday. Baker Gulch vicinity of Grays & Torreys Peak. Snowshoe trip if snow permits. Otherwise hike. Leave from H. H.
- April 7, 14, 21, 28, Evenings 7:00 to 9:30 P. M. Library open for the use of the public. An expert and someone in the library will be here to help you with your garden problems.
- April 8, Wednesday evening. Organic Gardening Club at Horticulture House at 8:00 P. M.
- April 12, Sunday. Silver Creek. Leave H. H. drive to Lawson on Berthoud Pass Road and park cars. Climb steep ore road to Silver Creek (ghost town).
- April 18, Saturday Afternoon. Plant Auction at Horticulture House 1:00 P. M. John Swingle, Auctioneer, various plant materials, trees and shrubs donated by local nurserymen. Don't miss this!
- April 20, Monday 10:00 A. M. Helen Fowler's drawing for rose bushes and other things here at Horticulture House.
- April 23, Thursday evening 8:00 P. M. Kodachromes of Denver flowers and gardens a collection of slides from various photographers. Should be very interesting.
- April 26, Sunday. Squaw Pass entering Chicago Creek and follow old road to Pass. Leave H. H.

May 3, Sunday morning. To Boulder for early flowers. Leader, Mr. Pesman. Afternoon may take short hike up one of the canyons. May find Pasque flowers and others.

This is the first of our regional issues. The editorial material and many of the ads have been assembled by Vella Conrad from JEFFERSON COUNTY.

GARDEN VISITS AGAIN!

It's about that time again, and for those who went with us last summer and the summer before, we promise to have some beautiful gardens to show you from which you will learn as before, and experts in garden design at each garden to tell you about that particular garden. Above all, we'll promise you fun with your learning and many pleasant hours. The gardens scheduled for these visits will be listed in the May GREEN THUMB, so watch for them. The date will be the third Wednesday of the spring and summer months—May 20, June 17, July 15, and August 19. We hope you will all come and bring your friends and guests. This is certainly the best way we know to make you acquainted with Denver and Denver gardens. 'Till then, bye.

—Sue Kelly.

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Iris

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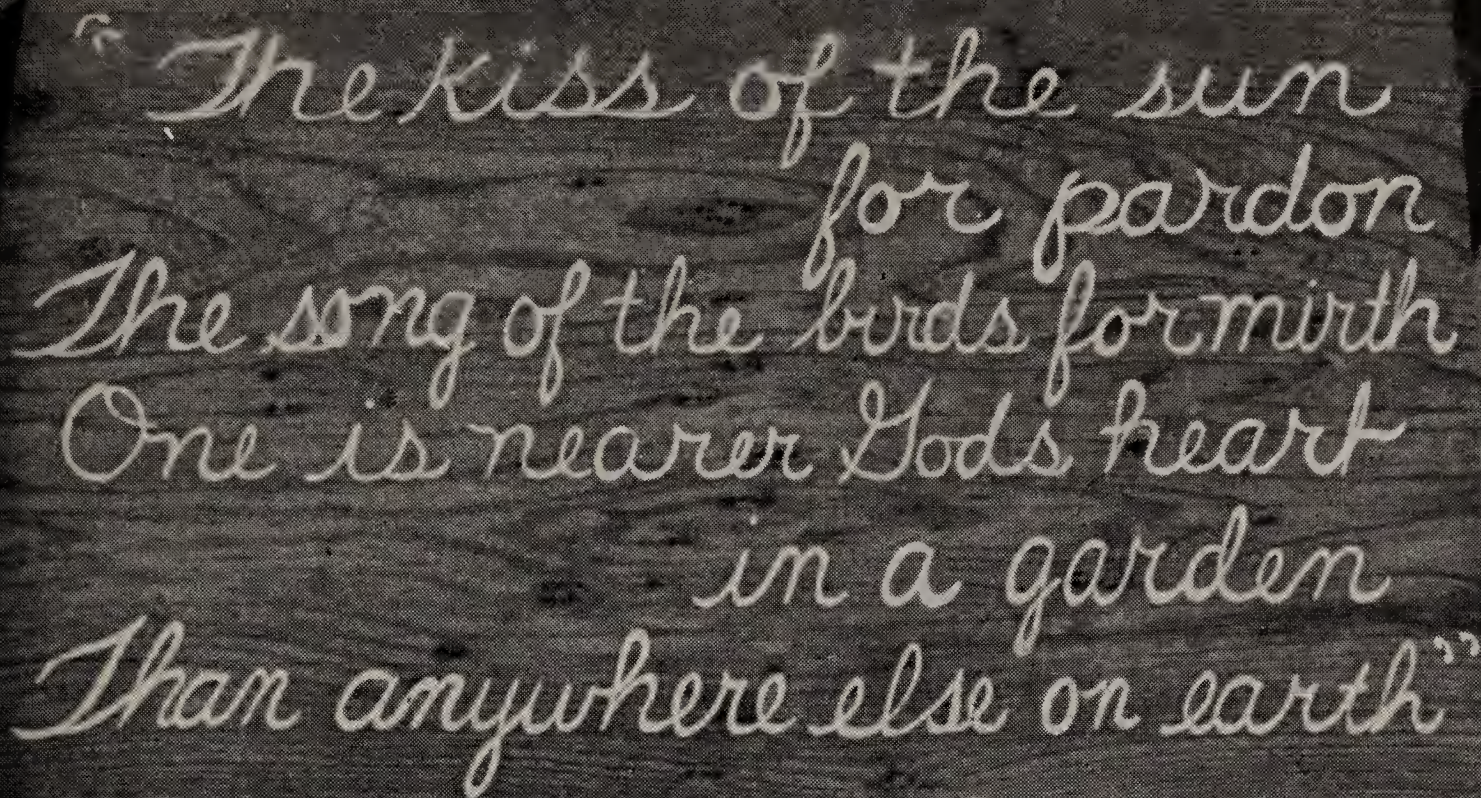
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*The kiss of the sun
for pardon
The song of the birds for mirth
One is nearer God's heart
in a garden
than anywhere else on earth"*

VELLA HOOD CONRAD

HOO DUZZIT ??

WHO meets you with the eternal questions in her eye, "Are you a member of Colorado Forestry & Horticulture Association?" and "Do you have George Kelly's 'Rocky Mountain Horticulture Is Different?'" and does it with such grace that you love it? Why, Vella Conrad, of course, our membership chairman. Really, I thought I could work with the best, but she wears me out completely thinking, planning, working and doing those things any good gardener would do, not just to get a new member for the Association but to encourage good gardening practices here in the Rocky Mountain Region, and above all, to help all those new home owners, either young or retired who need help. Whew! I make her sound formidable, don't I? But, really, have you met her?

She's not too tall, a bundle of nerves and energy, attractive in

jeans (which she wears in her garden) and once you've met her, you'll know what I mean. She belongs to only one garden club, The Suburban Garden Club, which is one of the most up-and-coming garden clubs in the Federation, but, believe me, there are a number of clubs who would jump at the chance of having Vella join them. I know that all of you who know her, know of her love for roses, so—she belongs to the American Rose Society and the Denver Rose Society, and there, again, she is indefatigable.

Any new member she brings into the Association is there for life, I can assure you, for she is so willing to help them and show them how the Association can be of help to each member, that they would hesitate a long time before losing that contact. As membership chairman, she is doing a splendid job, and as a friend, she's priceless. Sue Kelly



*Sunburst lily, photo by Herman V. Wall
This picture and lilies on the covers furnished by Jan de Graaff*

LILIES IN COLORADO

By JAN DE GRAAFF

THE discovery of new species of plants, their introduction into this country, their successful cultivation and, finally, their hybridization to give them added vigor and resistance to the rigors of a new environment, are all common processes in the development of horticulture.

Of no less importance is the human factor—the people who explore the wilderness to find these plants and the growers who import them and bring them into commerce. It is their selection, their taste, their sacrifices and their effort that bring the new plants to you. In the last analysis, however, it is the gardener, testing these plants in his own home grounds, who gives the final verdict. Actually it is he who broadens the horticultural horizon. I was quite vividly reminded of this truth a few months ago when I visited Denver, and, among others, met those outstanding gardeners, Mrs. Winegar and Mr. Bechtold.

Lilies are, at present, one of my main interests. I produce them on a very large scale and many of my new hybrids have been introduced commercially during the past five years. Many reports on success with these lilies had reached me but I did not know that at least some of them could be grown well in Colorado. Seeing color slides of these lilies, and of similar ones, flowering in all their majestic beauty in Denver gardens, made me realize once more how all the work that I have done to produce and improve these lovely flowers would be brought to naught, were it not for the devoted experimentation of such true gardeners.

Thanks to their work and that of other good gardeners in Colorado,

we now know that many lilies can be grown in your gardens. We know from similar experiences in other parts of the United States that, since some of the basic types will thrive in Colorado, others can undoubtedly be acclimated and adapted to give a good performance. One cannot expect a plant peculiar to the cool moisture of the Pacific coast to grow well in your entirely different mountain climate. Through hybridization or through chance mutations, others like them will eventually be raised.

When I was in Denver last fall I saw evidence that in the Aurelian types, the result of crosses between the trumpet lilies and the golden Henryi, there are true treasures for your gardens. I found too that in the Mid-Century group, the result of crosses between the Tiger and the Candlestick lilies, there are magnificent, hardy, vigorous and brilliant-hued lilies that are well adapted to your climate and soil. Other lilies galore still need to be tried out. It is the home gardener who must shoulder this burden.

For those of us who raise new plants, it is a source of deep gratification to work hand in hand with the ever-growing group of devoted gardeners all over the United States who are testing new material intelligently and with good taste. To have found so many of these real gardeners in Denver was a great pleasure for me. To hear their reports and to have their advice was again a source of inspiration to me to go forward with my work. I know that the years ahead will be brighter and that your gardens will be better and more colorful because of the hard work, the devotion, and the sacrifices made by your pioneering gardeners.



WHY NOT TAKE A CHANCE ON BEAUTY?

By IRENE BARNES

IT is a fascinating part of gardening to try the new and unusual along with the proven varieties. Sometimes we are sadly disappointed in the results, and again we may find something really different and better than the older ones. The pictures and glowing descriptions in the catalogs are deceiving at times—especially as to how the plant will react to our peculiar conditions of light, temperature, moisture, lack of humidity, and soil differences.

Some of the new varieties of flowers and vegetables I saw growing in Jefferson county last summer proved very satisfactory, and should be planted more extensively this spring.

My favorite petunias last summer were *Ballerina*, the lovely peach-colored "All-America Selection," and

La Paloma, a beautiful white with a pale chartreuse throat. Both are vigorous growers, covering an area from two to three feet across and furnish a mass of bloom all summer long. The blossoms of these types are very similar in shape, with a ruffled, ragged edge. As cut flowers they are excellent, lasting for a week or more, and their form of growth makes graceful branches for arrangements. Their only defect was that the tender blossoms were easily damaged by winds and hard rains. A few gardeners reported a slight variation in color, but on the whole I found them quite true to color.

The Imperial Giant scabiosas are an improvement over the older ones. Growing as tall as three feet, and with larger flowers in a variety of

shades, they are beautiful in the flower border and for cutting. To the older variety, Blue Moon, has been added Coral Moon, a medium-to-deep salmon, Lavender Moon, a pale lavender-blue, much lighter than Blue Moon, and Bridesmaid, a delicate salmon-pink.

Cynoglossum, variety Blanche Burpee, was lovely in my garden last year. This variety is taller than Firmament, a former "All America Selection" in a true blue. Blanche Burpee comes in several pastel shades not seen in the Chinese forget-me-not until this variety was introduced. There are all shades from pure white, pale blues, pinks, lavenders, to the deeper tones, making a lovely mass of blended colors. The plants are airy and very floriferous.

A favorite of mine, since I first tried it a few years ago, is Hunnemannia, Sunlite, the Santa Barbara poppy, Mexican tulip poppy, or bush eschscholtzia, if you like a variety of names! The yellow blossoms are tulip-shaped, hence a reason for one of the common names. The bushy plants grow one and one-half feet tall with pale gray-green, fern-like foliage, very like the California poppy. The petals are a golden yellow, and so shiny that they glisten in the sun, where they love to grow. The long tulip-shaped inner petals are surrounded by a frill of several rows of short petals.

Zinnias that appealed to me were the lovely azalea-pink Riverside Beauty, Floradale Scarlet, and Polar Bear. The old-fashioned zinnias always left me cold, they were so stiff and artificial looking. But the newer ones are more graceful and come in such gorgeous shades. Riverside Beauty is truly an azalea-pink, so we can have this lovely color though we can't grow the azalea here. The petals are twisted and curled, mak-

ing interesting material for flower arrangements. Try this one with honeysuckle blossoms in a matching shade, as I saw them in a local flower show last fall. Floradale Scarlet is a bright scarlet, with large, ruffled petals. This is a good variety for a mass of bright color, or for accents in the perennial border. Polar Bear is a little smaller and more compact. The color is white, except for a slight shading of pale chartreuse at the center when the flowers first open, fading to white as they fully open. They are especially lovely, I think. And then, the little Persian Carpet zinnias make the gayest of low borders without being flashy. The bright colors are so blended as to resemble an oriental rug. Try them in a sunny corner with Glitters marigold in the background.

Last summer I saw the new alyssum, Royal Carpet, in a trial bed in Jefferson county. This is one of the two annuals awarded medals in the "All-American Selections" for 1953. It is a very compact, low growing alyssum of a truly royal purple shade. The plants grow six to ten inches across, if thinned out so they have plenty of room. The plants will be one mass of blossoms. Carpet of Snow is a good companion flower for this alyssum, forming round mounds of snowy white to set off the purple.

Aster, Imbricated Pompom, was new to many, and is really a little gem. Webster says "imbricated" means overlapping, like the shingles of a house, and the petals really do overlap in just that way. The flowers resemble the pompom chrysanthemums, and may be substituted for the mums in corsages, if you are allergic to mums as I am. It grows lower than the other asters, and the blossoms form a bouquet of color on long stems that branch at the ground,

Another find in the flower world is the seedling dahlias, the singles and the doubles, the short and the tall. As beautiful as are the dahlias grown from tubers, there are more of the smaller, daintier ones that are so much easier to use as cut flowers than the huge exhibition type. The larger types can also be grown from seeds as annuals but do not come quite as true as the smaller flowering kinds.

Of the vegetables tried, Salad Bowl lettuce was really worth growing. The heads are huge, with leaves of a delicious flavor, very delicate in texture, and a good producer regardless of hot weather. I covered mine with crates for partial protection from the hot sun and found that this also kept the grasshoppers away.

Marbon tomato proved to be the earliest variety to ripen, in our tests. Planted on June third, the first ripe tomatoes were picked on July twenty-seventh, just fifty-five days after planting. The fruit was smooth, of a delicious flavor, and produced abundantly.

Heta cucumber was a new one for most gardeners in this area, and excited much comment for the unusual size and shape of the fruits. They grow from six inches up to two feet long, in various shapes, but mostly long and tapering, sometimes quite crooked. The smaller sizes are better for salads, but the larger ones are good for bread and butter pickles. The skin is light green and tender, requiring no peeling as with the regular cukes, and they will not cause indigestion as the others sometimes do. Also, an unusually crooked one may be just what you need to complete the fall arrangement you are making for the flower show.

The New Hampshire Midget melon was tried out here and proved to be very good. It is difficult to judge when they are ripe by the usual tests.

Look for a curling of the blossom end to tell when they are ready to pick.

It's planting time again, and my seed orders have arrived. What will result from my garden shopping spree this time? And where will I find room to plant all of the seeds?



MY OLD ROSE JAR

By ORA KEHN

My old fashioned china rose jar
Is filled with petals and tears—
Stirring them gently, they thrill me
As incense brings back the years.

Rose Petals! How they bring
mem'ries!
Saved from each lovely bouquet—
Stirring them slowly, I'm dreaming
Of youth and my wedding day.

My jar holds no rose of sorrow,
Yet, tears on them I've let fall
Somehow, the sweetness of roses
Have a few thorns after all.

But, tears and years and the spices
Have enhanced the old bouquets
And the fragrance adds more sweet-
ness
To mem'ries of by-gone days.

WATCH FOR THE PLANT AUCTION

April 18, Saturday Afternoon

SWEET PEAS, AND HOW TO GROW THEM

By HELEN FOWLER

ST. PATRICK'S Day is the traditional time for planting Sweet Pea seeds. This day itself offers no magic but around March 17th the ground is usually moist and in the right condition for planting. Sweet peas love to plunge their roots deep into the cool moist earth, so the seeds should be planted as early as the ground can be worked.

Instead of making the usual single row, dig two rows, 12 inches apart, running north and south. The maximum amount of sunshine is received in this way—your Sweet Peas get both the morning and afternoon sun. A six-foot wire netting is now put up between the rows, securely fastened to posts driven firmly into the ground in order to provide sufficient early support. Sweet Peas love to climb.

Dig on each side of the netting, as close as possible without breaking the space between, a trench 12 or 18 inches deep (I always make mine 18). In the bottom of the trench place about 8 inches of well-rotted cow manure which should be well trodden down for sweet peas like firm ground. Over this put about 8 inches of the removed soil which should be of good tilth. The entire area should be well dug in the beginning and given a good dressing of old manure.

Sow the seeds in your trench, which should now be about 6 inches deep (the loose soil will pack down into the bottom of the trench) and cover them with about 3 inches of dirt.

Then, unless your soil is very moist, you should give your sweet pea trench a good, thorough soaking.

When the plants are about three inches high, thin them out until they are 6, 8 or even 12 inches apart in the row. Then draw up around them part of the soil taken from the trench. Continue to add more of the soil as the plants grow, until most of the loose soil from the trench is banked up against them, leaving a final slight trench between the ridges and the surface of the soil. This depression is for catching the water.

Do not water frequently, but do soak them thoroughly when necessary. Do not wet the stems nor foliage at the first watering.

To keep the plants blooming, remove all faded flowers—try to pick fresh blooms every day. To allow seed pods to form, one after the other, simply means death to sweet pea blooms. Plants just do not bloom well and form seeds at the same time. Sometimes red spider attacks the plants. Frequent syringing with clear water will keep off this pest which often destroys the foliage.

When deciding which part of the garden should be given over to sweet peas, it is well to make the planting away from trees and shrubs, for these plants have a "first call" on water and food. The sweet pea is perhaps the most highly developed of all annuals. Its fragrant cut flowers afford pleasure to millions of gardeners every year.

Wheat Ridge Seed and Pet Supply

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Mrs. Harold Libby in her rose garden

HOW I GROW GOOD ROSES

By MRS. HAROLD LIBBY

EVERY gardener has his own rules which he follows to the best of his ability. He disregards much of the advice he is given, even though some of it might be right. In this article I will testify only to our roses, and will not be held responsible for trampling on someone else's ideas.

First, buy only number one grade bushes from local, dependable nurseries. This insures strong stock and correct climatic features. Many roses which do well in the coastal states will not thrive in our dry altitude and vice-versa. Your local nurserymen know which roses are best here. So don't be tempted by the beautiful pictures in various seed catalogues.

Above all things, prepare your soil before you plant your roses and not afterwards. In our area the soil needs very little help. After I adjust my better half to the work end of a shovel, he spades an ample amount of well rotted cow manure into the proposed bed. This not only adds food to the soil, but also adds humus and helps hold moisture. I also use a commercial liquid fertilizer.

Now it's time to plant. Dig a hole seven or eight inches deeper than the fully extended roots. Throw a double handful of rotted cow manure in the bottom of the hole, then some good soil. Soak the roots of the bushes in a liquid fertilizer solution for only five minutes. This solution consists of two tablespoons of the fertilizer to one gallon of water. Then place the roots in the hole, spread out in their natural position, and fill the hole half way up with dirt. Pour in enough fertilizer solution to settle the dirt well around the roots without

leaving any air bubbles. Finish filling with dirt until the bud is covered with two inches of soil. After this had been accomplished, further soaking should be done in a day or two.

Trim your bush back to eight or ten inches. (This is a good place for an argument, but as I said before, this is the way I do it.)

Watering is a very important factor. Roses should be deep root soaked at least one a week. If this is done properly, the top soil may seem dry, but if you will scratch below the surface you will find it damp. Soakers are good to use or just let the hose run a pencil stream twenty to forty minutes, depending on the particular type of soil.

Spraying depends on good judgment. When the bushes first leaf out fairly well, it is a good idea to spray for aphids, thus killing the eggs before they get a chance to hatch and take over. For this first spraying use Black Leaf 40. Personally, I like the convenience of the rose dusts, but if you have a very large amount of roses this can be quite expensive, so I use dust for a quick job if I see a bush needs attention and I don't want to take the time to mix a liquid spray. The dust is so handy that it is easy to catch the insects before they can spread to your bushes or do much damage. Once a month I use a chemical spray. We only sprayed three times all season last summer. I believe the early spraying is what saved us the work later in the season, because I know of many people who had to spray as often as once a week.

Once a month I also watered or sprayed the bushes with my liquid

fertilizer, this being the only fertilizer we use after the rose is planted for that season.

A layer of pure pulverized peat moss over your entire rose bed during mid-summer will not only cut down weeds, add excellent humus, but save you enough on your water bill, because of its absorbency, to soon pay for itself.

I usually try to keep the old blooms picked but the job gets ahead of me sometimes and I don't always get it done each day. This is always the time we have plenty of visitors to our garden. The faded blooms should be cut back to the first five leaf.

We do not mound our roses with dirt for winter protection. In fact, we even leave our climbers up on the fence instead of staking them down as many people advise. To our way of thinking nature takes care of things pretty well if she is left alone. We believe that people who grow roses could enjoy them much

more if they would quit constantly trimming, fertilizing, spraying, and bothering them in general, unless they really have a reason for doing so.

In our yard you will find beds of mixed Teas alone, while we have mixed Floribundas in our perennial beds. This spring we are planning a Floribunda bed so we can try a lot of the new varieties of this favored rose.

We are always being asked, "What is your favorite rose?" The answer, without any hesitation, is Peace for the Teas, Fashion for the Floribundas. There are so many choices for second place that we can mention only a few. Crimson Glory has its place in our garden along with Charlotte Armstrong, Rex Anderson, Mme. Henri Guillot, Mirandy, Eclipse and many, many others.

Perhaps our advice will go unheeded, but if you doubt its success in our yard, won't you come out and see for yourselves? You'll be welcome anytime.

PYRAMID STRAWBERRY GARDENS

By M. E. NIXON

THE urge to grow enough strawberries for our family's eating and freezing needs hits most gardeners about this time every spring. Yet many of our yards do not have enough space to plant all the ornamental trees, shrubs, flowers and lawn desirable for pleasant landscaping, to say nothing of a few rows of strawberries.

However, a new era has arrived! Almost any yard, no matter how cramped, can still boast room enough for one of the new strawberry pyramids. One of these would even be an attractive addition for the front yard, planted either with strawberries or a lowbedding, ornamental plant. The advantages of having an abundance of large, luscious, clean strawberries that are easy to pick without stooping or crawling along muddy rows, not having to worry about weeds or runners and not losing half your crop to the birds, are obvious to anyone.

One new strawberry pyramid now in popular use is a series of four



round, shiny aluminum bands, each 5 inches wide, and of progressively smaller diameters, formed into a series of terraces or steps, the total height being about 22 inches. They are permanent, never rust, rot, warp, or discolor, require no upkeep, are always clean, attractive and safe, and will remain so for years and years.

When you have purchased your strawberry rings and you have your strawberry plants on hand, it's time to get busy preparing the soil and placing the pyramid. Select a level, sunny location, and with a 3 foot string between two stakes (one driven in the ground at the center of the pyramid) scribe a circle 6 feet in diameter in the ground. Place the largest ring on this mark and fill with good garden soil. Being round, the soil pressure as it is tramped within the ring, is equal in all directions, resulting in a strong, rigid unit. Keep the soil higher in the center, so that drainage will be toward the plants. Now place the next smaller band so that the terrace is about 8 inches wide all around, and fill in as before. Continue with all four rings and when completed you are ready for the planting. Plants should be spaced about 8 inches apart and mulched well with grass clippings or sawdust. This deep mulch is very important as it keeps the soil cool, retains moisture, and discourages the growth of weeds. Add more grass clippings from time to time as they dry and shrivel up.

If your soil is tight and heavy, it is a good idea to mix in enough sand to allow water to drain easily. A small amount of organic fertilizer, barnyard grade, is always a worthwhile addition to your mixture, especially when the soil is poor to start with. This provides additional nutrients and extra water holding capacity for the plants. If you have only the

poorest clay soil and happen to be the meticulous, exacting type of gardener who measures everything just so, you can really go technical and use this recipe for your own "super-soil." A six-foot diameter pyramid will require about 1 cubic yard of soil to which may be added about $3\frac{1}{2}$ bushels of coarse sand and 10 lbs. of chemical fertilizer, or 25 lbs. of barnyard fertilizer. First mix sand and soil together until uniform throughout, then add fertilizer and mix thoroughly.

In the two strawberry pyramids we planted last year, the foliage grew so luxuriantly and densely, as the accompanying photograph shows, that the berries were well covered and the birds were no problem at all. However, if the birds do become troublesome, wire supports may be devised to support a transparent plastic or screen cover. Such a cover would also be a valuable protection against our sudden devastating hailstorms.

We also had a pyramid planted with dwarf marigolds last year, and they formed a gorgeous mound of brilliant gold and bronze blossoms. This year we are planning on one planted with the new Royal Carpet Alyssum. Although aluminum is somewhat expensive, this method of culture is so easy, clean, time-saving, and satisfying that it is well worth every penny.

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MORE ABOUT AFRICAN VIOLETS

By MRS. THEODORE M. GREER

AFRICAN Violets (Saintpaulias) are still my favorite house plants because (I can grow 'em), with the basic requirements of light, temperature, and humidity satisfied, they will still bloom almost continuously the year around. I know of no other plant that will acclimate itself to our homes and treatment and still give so many flowers and pleasure for so little investment in care and money.

It has been said by an eminent horticulturist that an automobile battery needs a constant supply of electrical energy to make the motor run—your African Violet needs light in the same way. Light furnishes the energy to produce food for the plant to grow. So we need fairly intense

light for flowers. Some early morning sun or late afternoon's slanting rays are good in the shorter days of the year; but some filtering of light will be most necessary in the summer and late spring in this high altitude where the rays of ultra violet etc. are unadulterated by smog. Then, of course, these plants can be grown with no natural light at all, but under fluorescent lights. I prefer 48 inch 40 Watt white at a measured distance of fifteen inches above top of pot for a period of eight to twelve hours per day. This will give approximately thirty inches by forty inches of growing light. This is a most satisfactory way to grow African Violets.

Temperatures can range from six-

ty five to eighty degrees Fahrenheit for optimum growth and flowers. Then there is that thing called humidity—here in our high, arid country humidity must be artificially supplied, and this can be done in many ways. If your plants are kept on the kitchen or bathroom sill, then perhaps no extra steps need be taken. If not, placing plants on moist sand or pebbles, or the use of an ordinary hand sprayer with tap water can be used to great advantage when you have only a few plants. Never spray plants when they are in sun or intense light. This will cause leaf spotting. This applies, too, when plants are washed. Always put them in a darkened place for the water to evaporate from the leaves. I prefer to wash Saintpaulias when they are dry as the leaves and petioles are then less brittle and less likely to break off. If drops of water remain in center small leaves, blow into center of the plant to remove them.

Growing mediums are almost as many in number as people growing Saintpaulias. However, here is a place where I must say something that will make me most unpopular everywhere but in our own area, and that is: *almost all* articles on African Violet culture I have read have been written by folks having great success—but in Atlanta, or New York, or Ohio, or some equally humid place where their growing mediums are usually basically acid. So we read, add charcoal or lime. In this area where we have many soluble calcium salts, mostly alkaline, we definitely do not need the addition of any sweetening agent. Basically we do need a friable, easily drained, rich mixture—one that, moistened, will hold its shape when squeezed together but tending to fall apart. If it is sticky, or flattens out like gum

or dough, it is not porous enough. We use one part leaf mold or rich garden loam, one part Colorado (black) peat moss with enough white sand and/or vermiculite and/or sponge rock to make the mixture crumbly—so that when watered from top the water drains through well. You can see there are several combinations of mixture in the above.

There has been much said on the subject of sterilization, both heat and chemical methods. There are sterilized potting mixes available all ready to use, or you may sterilize your own mix in the oven. I use an ordinary meat thermometer—inserted in the middle of pre-soaked mixture—about one hour at two hundred to two hundred and fifty degrees will bring the meat thermometer to one hundred and forty degrees which should assure freedom from small flies, garden worms, etc. Let soil stand for a week or so, stirring occasionally before using. For chemical sterilization, one table spoon of formalin 40% to one teacup of water will take care of one half bushel. Make layer of soil and wet thoroughly. Repeat until mixtures are used. Cover with dampened newspapers and after twenty four hours soil may be spread out to dry. When the odor is gone mix is ready. Do not mix or handle when mix is wet with above solution. Do not try to use this method in the house but in open garage or out doors. Use clean pots that have been washed and sterilized if used previously. Any kind of pot may be used, but amount of water must definitely be adjusted to type of pot (whether or not it is glazed, non-evaporative, or unglazed and easily aerated). Any complete plant food will be appreciated by a plant long in same pot, or during and after a period of heavy blossom.

The National African Violet So-

ciety has grown from nine people in November 1946 to over eleven thousand members as of April 1952. This increase of interest has of course brought about much research into the many phases of growing Saintpaulias; proper use of fluorescent lighting at Ohio State university, studies to discover some method of controlling nematodes are under way at Ohio State, symptoms of nutritional deficiencies at Denver University, and investigation into causes of crown rot—thought to be fungus disease or diseases—at George Washington University. These projects are being

financed by the National African Violet Society Research Program and the Research Program for next year is equally ambitious. Then there is the tremendous task of the Registration Committee. Since there were about eight named hybrids in 1936 and at the present time there are about eighteen hundred names of African Violets—many of which are duplicate plants—a testing or comparison station or stations is one of the hoped-for things. So, in closing, may I make one fervent plea—please, please don't name your untested, un-compared seedling.

LET'S COOPERATE

By SCOTT WILMORE

ALL of you who purchase nursery stock know that our business is a feast or famine situation—and we would like for you to understand and respect this situation. Probably the nursery business would be considered one of the sweetest businesses in the world if all its trials and tribulations could be distributed equally over a twelve month period. While this can be done in the southern and Pacific Coast areas, it certainly can't be accomplished in the Rocky Mountain and northern regions. The result is that we nurserymen find ourselves working under pressure virtually from the time our first sale is made in the spring until the last one is made in early June.

We have just so many days in which to round out a spring season, and any time we lose through inclement weather conditions, as well as through indecision on the part of the customer, has a tendency to slow up our delivery schedule. I enjoy visiting with any and all customers who come to our office, and I only wish it were possible to wait on each and

every one of them individually. Unfortunately this is impossible, and I wonder how most of us stand up under the terrific strain of our 16-18 hour days. We do know that later on we can enjoy a good long rest, and this helps us get through a season.

I really love the nursery business. Perhaps part of the reason I love it is because I am actually living with nature most of the time—through both the hectic and the slow seasons. Occasionally I get the blues and wonder whether it really is worth while—but usually a few hours sleep and the smiling face of a pleased customer restore my faith in my profession.

So if at times during the next few months your nurseryman seems to be hurrying you a little, please remember that his busy season is probably in full swing. Normally, he will bend over backward to please you—not only because you are his bread and butter, but also because he is a gardener himself and enjoys nothing more than talking “green-thumbings” with a fellow addict.

COLORADO SOILS

By STANLEY H. STOLTE

Jefferson County Agricultural Agent

COLORADO soils are essentially as different in type between areas as are soils throughout the nation. For our discussion let us consider the top foot of the earth surface which we will call soil and with which we are concerned for crop producing.

It has taken Mother Nature thousands of years to produce this top foot of earth. Someone has estimated that when Mother Nature used all of her forces working night and day, it required 600 to 1000 years to break down the rock and add the humus in the top one inch of our soil.

The top soil is alive; it breathes with the changes of the temperature during the day and night. The micro-organisms or germs are the active armies making the soil fertile. These micro-organisms break down the humus; they create conditions to dissolve fine rock. Soil particles and minerals are also dissolved so that our plants may utilize the materials and prosper. The soils have three duties to perform in plant growth. They furnish food, they act as a store-house for water, air and fertilizer, and they furnish anchorage for holding trees and plants.

Since Mother Nature furnished us with the soils, it is our responsibility to utilize these soils to the fullest extent. In handling or working soils it is important to understand the physical structure as well as the chemical analysis of the particular soil. For the most part Colorado soils are extreme in the lack of humus or organic material, and usually, it is safe to say that the number one step in preparing it is that of adding a con-

siderable amount of organic material. Organic material is essential toward improving the tilth of the soil, and it needs to be present so that the soil bacteria will be encouraged to perform their functions.

When possible, organic material should be plowed under or turned under in late summer or early fall with no attempt made to break up the lumps or clods until spring. By adding the organic material to the soil in the fall, decomposition begins at once and continues until early spring and may make conditions more ideally suited to the soil bacteria. Once the proper amount of organic material has been added to the soil, conditions should be studied to determine the food requirements of the particular crop or plant that will be growing in the soil. Plant food should be supplemented to the extent required for growing the particular crop.

The application of irrigation water in the proper amount and at the proper time will hasten the decay of humus and will increase the yield of crops. If an over supply of irrigation water is added, the plant foods will be leached from the soil since they have been made soluble by the soil bacteria for the use of plants. It is, therefore, important that extreme care be taken in the irrigating.

Someone said: "If all the accumulated soil-management information and wisdom of a hundred generations of Master Farmers were boiled down to just three sentences, one of these sentences would certainly be: 'Provide for regular and frequent renewal of the supply of organic matter in the soil.' "



MY NEIGHBOR'S GARDEN

By VELLA HOOD CONRAD

WALK with me into my neighbor's garden. You will scarcely notice when you pass through the gate from my yard into his, for we have planned and worked together to create a feeling of oneness. The combined frontage of our lots equals over 220 feet. This is shrubbed and screened to our advantage.

Mike and Gert Evans, our neighbors, bought an older home. I am constantly amazed and pleased at the transformation they are working with their garden and with the house. They are following through on a plan, and many hours of hard work and thought have gone into this place. We have not sacrificed individuality in planning together. There is unity in our main yards, but in each yard there are little nooks and spots of privacy that we share by invitation.

An old box elder tree has been trimmed and cared for to make a perfect setting for their picnic area. A most unusual lazy susan table was built over an old well under this tree, and the back edge of their porch extends into a patio. They are in the process of building low brick walls to tie this all together, and you will find an adorable little girl's playhouse worked in with all this. There is also a play area close by for the girls.

You walk through another gate into the "garden proper". A new orchard has been started, they also have strawberry beds and space for a vegetable garden.



HILLCREST GARDEN FORUM

By MAY YARD

THREE years ago, as housewives from Massachusetts, Wisconsin, California, Illinois and many other states moved to Hillcrest in Wheat Ridge, they were immediately confronted with lawn and garden problems. All of these problems were different from what they had been accustomed to "back home." "When is the best time to start a lawn?" "Do roses do well here?" "What kind of fertilizer is best?" Trees and shrubs were major headaches, too.

A former Texan, who had married a Coloradoan, came to their rescue. Mrs. Donald Spencer answered their questions, invited them to attend the Home Garden Club of Denver with her, and at last, suggested a neighborhood garden club, patterned after the Home Garden Club of Denver.

The ladies were happy with Mrs. Spencer's suggestion and so met one morning over coffee and doughnuts. In October 1950, the Hillcrest Garden Forum of Wheat Ridge was started, with Mrs. W. M. Yard, a former Nebraskan, the first president. The purpose of the club, according to its by-laws was "to enrich and enlarge our knowledge of home gardens in Hillcrest Heights, by the exchange of ideas and discussion of our problems."

Much was accomplished the first year, as each member was eager to learn and willing to help others. George Kelly, of the Colorado Forestry & Horticulture Association, was the first guest speaker. M. Walter Pesman made a survey of the neighborhood for the club members and was most helpful in laying out plans for the grounds surrounding each home. Various nursery people were guest speakers and many members

of the club told of their experiences with house plants, herbs, annuals and perennials, and flower arrangements.

In 1951 Mrs. Harriet Binder was elected the Club's second president and Mrs. Randall Gould is the present president. Each year the club members hold a family picnic so that all members of every family could become acquainted. The first year the club packaged over 1500 envelopes of seed for the Izaak Walton League and for the past two years had entries in the Harvest Festival at Arvada. Plant sales were held twice a year, and members have made a habit of giving their neighbors their surplus flowers, seedlings and bulbs. Last year the club started a library, which will be available to all members.

CONTROL OF FIRE BLIGHT

By W. J. HENDERSON

The use of Dithane Z-78, at the rate of two pounds per 100 gallons of water, to which it is well to add one ounce of Triton B-1956 spreader, applied in the 10 percent bloom and again in the full bloom stage is recommended for greatly reducing current seasonal spread of the fire blight disease. The spray should be applied with a power sprayer. Spraying with Dithane Z-78 is not all that is required for control of fire blight. There must be employed proper pruning methods and inactivation of holdover cankers as well as the spray program.

Send for Bulletin 408A, "Fire Blight of Apples and Pears," issued by the Extension Service, Colorado A. & M. College, Ft. Collins, Colorado, for further information.

THE "HUNDRED YEAR PROJECT"

By DOROTHY GOULD

WHEN my husband and I moved into our newly-built Wheat Ridge home overlooking the Clear Creek valley toward the towering Rockies, the eighty-foot bluff on the northern edge of our property was at once a joy and a despair.

It was a joy because the presence of this sharp drop gave us a wonderful view and the sense of being perpetually in flight, remote from the hundreds of square miles of plain stretched before us with the Continental Divide as a back drop. Yet at the same time we were plagued by several near-at-hand details, including erosion, a battle with weeds which charged up to give battle with our new lawn, and a sense of futility in trying to cope with problems of our own property. There was also obvious waste in leaving our bluff nothing but jungle.

Our first effort to improve matters was a clear defeat. I got some split cedar logs and we pegged them along the bluff edge, end to end. Rain and melting snow promptly burrowed under. The erosion was worse than ever and the weeds grew up as usual though it was easier to step along the edge and wallop them with a sickle.

We found our answer in California when we visited a Shanghai friend. He had done what we ought to have thought about long before,

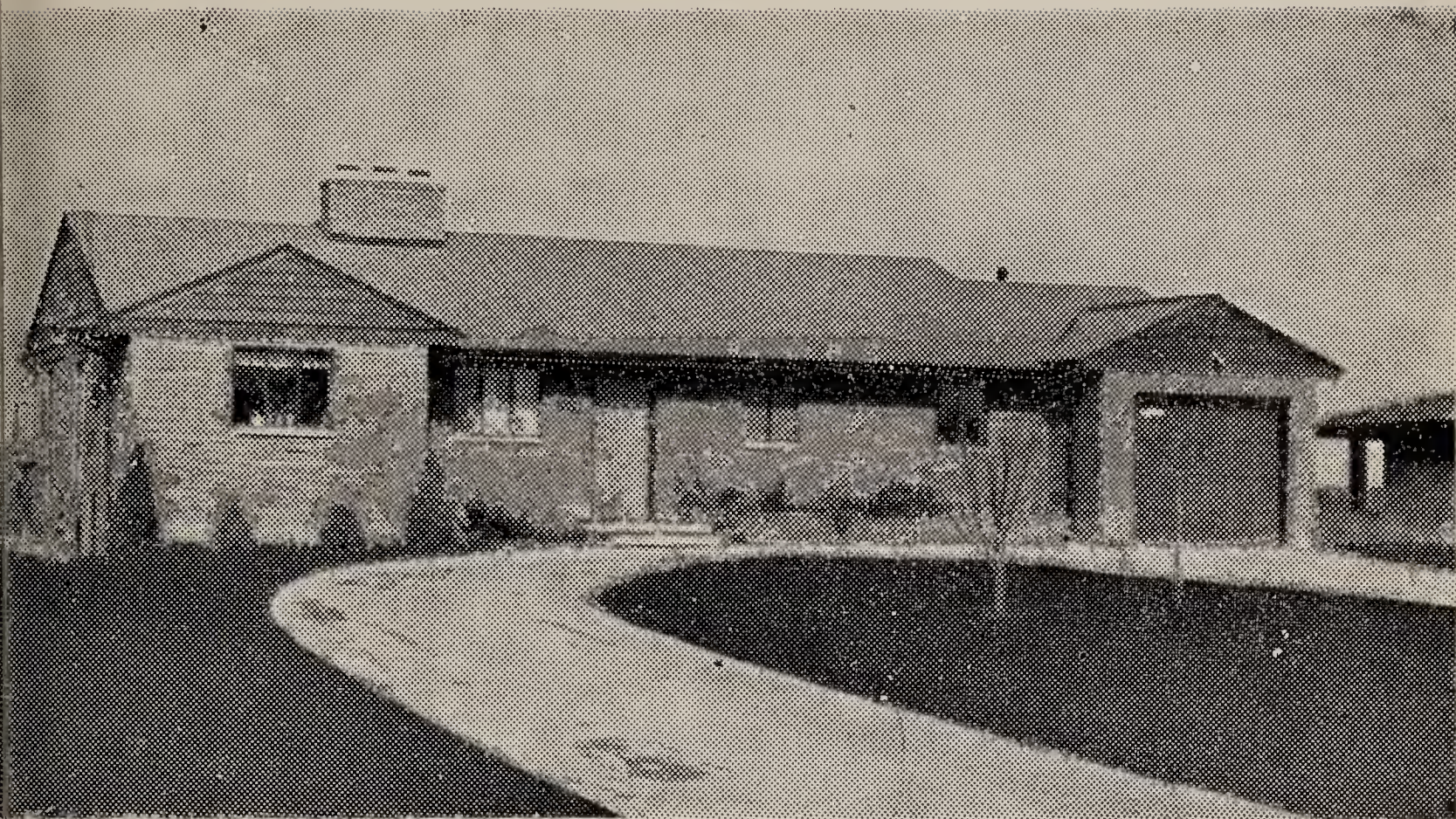
because of our former Far East residence. Steep hillsides are found in the Philippines, China, Korea and Japan, and for centuries the natives there have controlled and turned them into useful areas by terracing. That is what our Shanghai friend had done with his hillside on La Habra Heights and on our return to Colorado, we ordered California redwood posts and planks which stay rot-free without chemical treatment.

My husband, who considers himself far from a handy man, if only because much of his life has been spent in cheap-labor areas where "master's" work is with the brain, if any, felt capable of simple work with a shovel. He started at one end of the bluff and dug out a sort of shelf, reaching down about eighteen inches from the bluff-top. The idea was to make this permanent by a redwood support.

The reason he went down eighteen inches was that this was the width of three six-inch redwood planks—rough wood an inch thick. His notion was to shore up the dirt with a sort of fence of these planks. The length could vary with the curve contours of the bluff, and the number of four by four-inch posts required to support the planks could be guessed by the length of the "fence"-section. It seemed that the initial section could be twelve feet long and that three posts should hold this. So Randall borrowed a post-hole digger (later he bought one of his own, as they are cheap) and dug three holes two feet deep.

On the lawn above we assembled the three planks nailed lightly against the three posts, figuring things so that one section could be carried a few





Home of Randall and Dorothy Gould

yards and dropped into place with posts outside planks, and tops of posts flush with top edge of top plank. Amateurs should be careful to visualize the accomplished fact or they may find the posts sticking up in the air instead of down into the ground, or at the inside rather than outside position. (Experts pay no attention to this admonition!)

As a rule, a little extra tailoring would be required, perhaps a hole or two dug an inch or two deeper, but this was all fun and gave a great feeling of accomplishment when the time came to throw rocks and dirt into the holes and make things solid by settling the dirt with a hose. It was also fun calculating the lengths of sections, which sometimes were as much as eighteen feet or, in one place where we wanted a sharp almost-curve, as short as four.

Randall first made this shelf along the entire bluff line, about eighty-five feet. That meant a firm support for the whole edge, and, also set the en-

croaching weeds back a bit. We could walk along the dirt "shelf" if we wished, but, of course, we promptly realized that at many points we needed and could make good use of further terraces. Randall varied construction to suit the terrain. At steep points he had to use as many as half a dozen boards for a height of three feet. All this was done just on a basis of sizing up the situation, but it worked. At the center we have as many as five terraces, and every one of them is useful for vegetable growing, while along the top we have a beautiful lot of flowers. The discarded cedar was set into the ground, again, end to end, roughly parallel to the terrace-tops but two to four feet in, thus reserving ground for flowers and cutting it off from the lawn. When Randall mows he can run one mower-wheel along over this line of cedar.

We'll probably put in another terrace or two or three as time goes on—such a job can be handled as gradu-

ally as one likes. Meanwhile, we have been inspired to build steps, cut zig-zag paths in the less precipitous parts of the bluff, and clean out a lot of useless brush and poor types of trees. In these reclaimed areas there are all kinds of charming possibilities in the way of flowers, plants, shrubs and new trees selected for various reasons. For example, we've just put in an apple tree experimentally beside one of the new paths;

I have set out dozens of flowering plants which I hope may dominate the former weeds and sticker-burrs; Randall wants to transplant some grapes and see how they make out in this north slope.

We call our bluff the Gould "hundred-year project" and believe that with the fundamental aid of our terraces we can continue without time limit to get more fun out of it than all our easier-to-manage flat property.

THE BIG TREE

By DOROTHY GOULD

WILL a *Sequoia gigantea* grow in Colorado? I'm going to try, and if I succeed it will be a feather in my cap some 3,000 years from now when the mighty giant stretches its arms some 200 feet toward the sky.

It was my friend Mr. Petersen of Calistoga, California, who raised the seedling from a seed found in the Mariposa Grove in Yosemite National Park. A man of 80, Mr. Petersen is young enough to look forward to results which might take a while, so he planted seeds in pots and nurtured them tenderly in his greenhouse. When I visited him last fall he thought I should take one of the seedlings back to Colorado where "the altitude would be just right."

Now two and a half years old, my "Big Tree" is about five and a half inches tall and has beautiful grey-green feathery branches. The trunk has the thickness of a slender lead pencil.

The *Sequoia gigantea* is a slow grower and is not to be confused with the sempervirens, or costal redwood which may grow 100 feet in half a century. The oldest *Gigantea* in the Mariposa Grove is 3,600 years and has reached a height of 265 feet.

It is 35 feet in diameter and its first limb is six feet in diameter. One walks reverently in its presence.

The Big Tree thrives in altitudes of 3,000 to 8,000 feet and needs sheltered glades and plenty of moisture. Its roots are shallow and take up millions of gallons of water in the course of a year. Wheatridge has the altitude and I have the location, for I plan to set out my tree down the shady northern bank to the rear of our house overlooking Clear Creek. I'm not too sure about the millions of gallons of water, but there are natural springs which run all year round and the ground seems just as damp as in the Mariposa Grove.

What luck do you think I'll have?

Wheat Ridge Nursery

See our tulips in bloom and order
for fall delivery

Also spring blooming perennials
to combine with them.

7800 West 38th Avenue
Arvada 412

OUTDOOR DINING ROOM

AN outdoor living area for all types of weather is what the W. M. Yards wanted when they moved to 4450 Allison in Wheatridge from their home in Omaha, Nebraska. They had in mind something for informal, relaxed living. When they spotted an old kitchen range out in the country, they found they could have it for hauling it away. The concrete floor of the patio ($13\frac{1}{2} \times 18\frac{1}{2}$) was already in, so they brought the old stove in and parked it on the southeast corner of the patio.

Afterwards, there were dozens of trips out Rocky Flat way to gather rocks of all sizes. Several thousand rocks were used to enclose the stove on all three sides and to make a chimney up to the roof. A small grill was added to the side of the stove where the water reservoir had been removed. This was enclosed in rock, as was the base of the stove.

It was an old rusty stove, but with a bit of cleaning and polishing, it

looked almost like new. It was a good cooker and baker, so the Yards used a lot of elbow grease to make it presentable on the outside.

During the 1952 summer season the patio was roofed and screened to make an outdoor room. The patio was enjoyed by the Yards and their friends on a hot afternoon, or a rainy day, or an evening when the bugs were prevalent. The cooking had that outdoor flavor although it was really cooked under cover. The 1953 program calls for a work table adjoining the grill, cabinets for dishes and cooking utensils, and a variety of shelves for flowers and knickknacks. Bamboo shades are a must, too, in 1953, to give privacy when desired.

The cost of the room, with Mr. Yard doing all the work, was in the neighborhood of \$150.00 for the lumber, roofing, screen, nails, etc., but it has given the Yards an extra room for summer use.





Not Holland, but Arvada, Colorado

TULIPS IN THE SPRING

By EVELYN MILES JOHNSON

TULIPS are the backbone of the spring garden. They are hardy, easy to grow and sure to bloom. They are especially welcome in the garden because of their stately height and brilliant colors which no other plant can provide so early in the season. The effective use of tulips depends on several factors such as good bulbs, proper planting and good care as well as good planting arrangement and color harmony.

Bargain assortments of mixed bulbs are nearly always a disappointment. It is best to buy good bulbs in separate colors so that the gardener can mix or match them according to his own taste and the needs of his own garden.

Even the best bulbs will fail to produce the large blossoms and long

stems they should unless they are properly planted. Deep planting is best to prevent a too early start in spring. Eight to ten inches at least and twelve to fifteen inches in sandy soil is about right. Bonemeal or superphosphate should be mixed with the soil. Either is good but more care is needed with the superphosphate to keep it from direct contact with the bulbs. After the bulbs are covered a mulch of peat moss and barnyard fertilizer may be put on to give further protection and to provide additional food when the plants appear. Bulb plantings should be well watered when planted in the fall so that root growth will start at once. Then regular watering once or twice a week should begin as soon as the plants are up and should continue

until the blooming season is over. This attention to regular and thorough watering is absolutely essential to produce large blossoms and long stems.

Bulbs, if planted deeply, may remain in place for several years if fertilized regularly. Only when they fail to bloom or the blossoms become small will it be necessary to lift and divide the bulbs and replant them in new soil.

Everyone admires the brilliant displays of thousands of tulips planted in parks and other public places. The same striking color effects can be obtained in the small garden from a few bulbs if a little thought is given not only to the choice of colors but also the arrangement of the planting. Tulips should not be planted in a thin line, Indian file, but in groups or clumps. All the tulips in the clump should be of one variety or color. A clump so planted appears as a well-grown plant with several blooming stalks and it will stand out as a definite spot of color in the garden. Clumps may be large or small, circular, oval or irregular in shape to fit the space being planted.

Clumps of tulips may be planted along walks, on each side of steps or scattered among other spring blooming plants in the perennial border. Some of the plants which bloom at the same time as tulips and combine beautifully with them are Arabis, Iberis, Bleeding heart, Doronicum, the dwarf Phloxes and Alyssum. Many gray foliated plants such as Stachys lanata, Nepeta mussini or Cerastium tomentosum make a beautiful finish for tulip plantings.

The great color variations in the tulip family make it possible for the gardener to let his imagination go and to create his own garden pictures. He may choose tulips in brilliant flaming colors, soft pastels or

bronzy autumn-like ones. He may combine tulips with each other or with other plants in the garden. And for the money expended and care required no other garden plants give more dramatic color and beauty.



OREGON GRAPE

A Good Winter Ground Cover

Mahonia aquifolium or Oregon Grape which is native in the mountains make an excellent winter ground cover for either sunny or shady locations.

The plants grow about one foot high, have dark green foliage in summer, turn brilliant red in the fall and then change to a greenish-purple in the winter. They spread by underground runners and when growing in fertile soil soon make a dense ground cover as illustrated by the planting in Clermont Street Parkway. Mahonia has many other uses, but as a neat, attractive winter ground cover, it is unexcelled.

EARL SINNAMON

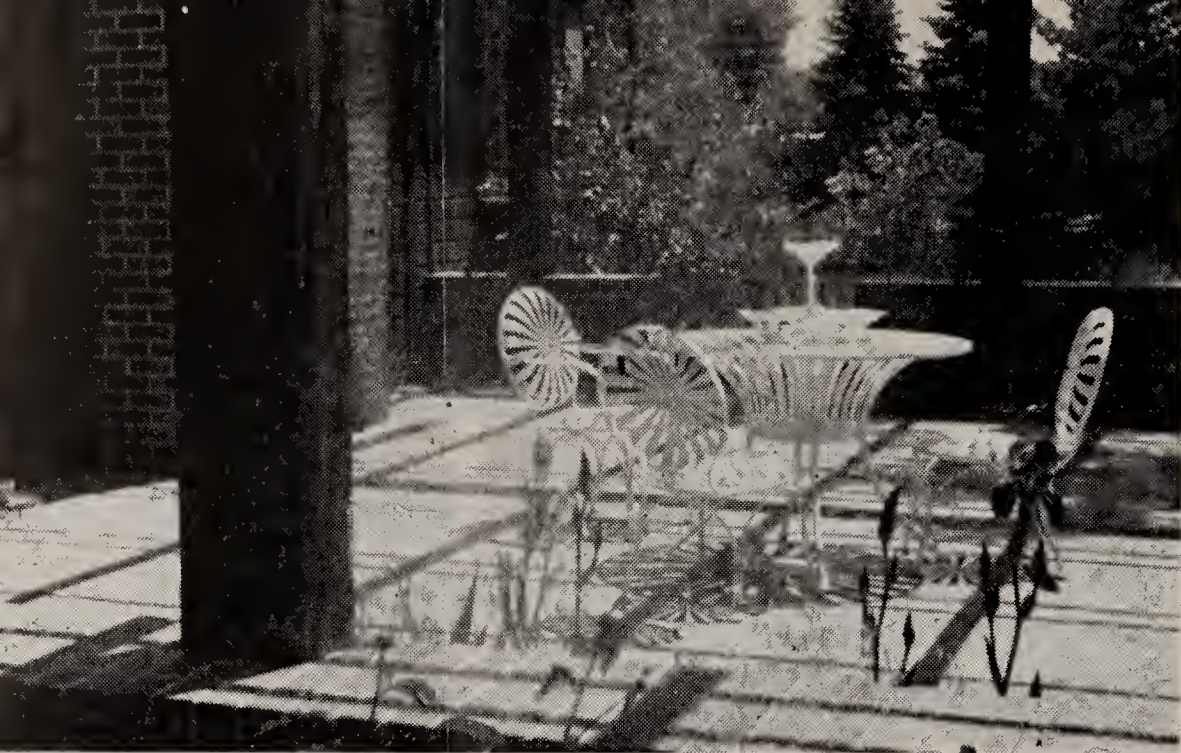
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Views and JEFFERSON CO

Above left: E

Above center: Pet

Above right: Inform

Lower left: Two views from gar

Below: Garden

Right center: Rose

Lower right: Garden



Reviews of CITY GARDENS.

owler's Patio

ld of Irene Barnes

oof Philip Handwerk

o Mr. and Mrs. Henry J. Conrad

A. Mortimer

er of Mrs. Beulah Son

sof Phillip Handwerk



MEN'S GARDEN CLUBS

By R. G. MYER

SINCE this issue of "The Green Thumb" is to be a Jefferson County Edition, it would not be complete unless it be known that Jefferson County has more Men's Garden Clubs than any single County in the United States. Denver and vicinity now has nine clubs. Four are located in Jefferson County: The East Jefferson Men's Garden Club, The Wheatridge Men's Garden Club No. 1, The Lakewood Men's Garden Club and The Greenmountain Men's Garden Club, all comprising a total membership of 90 to 95 members.

We have found that a Garden Club with a membership of 20 to 25 members becomes a community project. This eliminates long distances to meetings, the necessity to rent meeting places, large annual dues and so on.

We have had some of the most educational and worthwhile meetings, conducted by some of the best speakers and moderators you could find anywhere. They, from their actual experience, have gladly given us advice and help in our struggle to grow beautiful lawns, trees, flowers, shrubs and to improve soils.

We have question and answer periods, during which we are given many helpful suggestions.

We feel we have saved several dollars by learning what to grow and what not to grow. Our mile high altitude, alkaline soils and climatic conditions make it difficult for us to raise a lot of trees, shrubs and flowers that are so gloriously advertised in our yearly catalogues. So we have to use the advice and experience of people who have learned by experience. Nevertheless, we are always striving to grow many things the experts

say are impossible in this climate, and sometimes we succeed.

Most club dues are around \$3.00 per year, which covers a yearly membership in the National Organization of Men's Garden Clubs and the quarterly magazine, "MGCA," which in itself is worth a great deal.

The social hour after the meeting, with its refreshments, furnished by the host, is always enjoyable, as is the informal conversation where many a project, bug, or insecticide is discussed. We have ladies night, and an annual dinner when the ladies are invited. This year we hope to have around 300 guests and members.

There should be at least 50 Men's Garden Clubs in and around Denver. Any man desirous of joining a club or needing assistance in organizing a new one, call Russ Myer at BE. 3-2426.

Our creed is: we meet on common ground eager to learn something; to hear of some new experience; to mingle with men with mutual understanding. Each member takes away new thoughts; new ideas gathered from fellow members.

HAVE YOU TRIED THE MIDGET VEGETABLES?

By GUY FOX

This year I shall plant three of the midget vegetables that did well for me last summer: New Hampshire Midget Watermelon, Minnesota Midget Muskmelon, and Faribo Golden Midget Sweet Corn. I am wondering what the experience of other gardeners has been with midget vegetables in the Denver Area.

The melon midgets both ripened

well here and were sweet and well-flavored. Half of a melon makes a nice serving and the whole melons slip easily into the refrigerator. I have heard that some have had difficulty knowing when the water-melons are ripe. Try watching the little curl at the base of the melon stem. When it is pretty well dead, the melon is likely to be right for picking. At least, this system has worked for me.

The corn was of excellent flavor and made dainty little ears for appetites not too robust. The husks are not very heavy, though, so the ears might not be good for roasting.

The New Hampshire Midget Watermelon seeds can be purchased from most seed houses. I bought the other two kinds from a seed company, in Faribault, Minnesota.

FALSE AND FLAMBOYANT ADVERTISING

By HARVEY SANDERSON

False and flamboyant advertising in the horticultural field was denounced by the more than 200 affiliates of the Men's Garden Clubs of America at their 1952 convention in Boston.

Text of the resolution approved by the delegates to the national sessions read:

Whereas, reports have been received by the Men's Garden Clubs of America of a rising flood of flamboyant, and frequently false advertising in the field of horticulture;

And, Whereas, investigation shows advertisers have often overstepped the bounds of fair and truthful advertising of horticultural products and supplies;

And, Whereas, various horticultural trade organizations have ac-

knowledged the presence of such flagrant abuses of the confidence and goodwill of the gardening public;

And, Whereas, one of the major aims of the Men's Garden Clubs of America is the spreading of accurate, truthful horticultural information to men gardeners throughout the nation;

Now, Therefore, the Men's Garden Clubs of America, in 17th annual convention assembled at Boston, Mass. this 26th day of June 1952, hereby resolved;

1. That the Men's Garden Clubs of America denounces as harmful to the best interests of horticulture these abuses by unscrupulous advertisers of the confidence of the garden buying public, and

2. The Men's Garden Clubs of America commend the action already initiated by such organizations as the American Association of Nurserymen, the American Horticultural Council and the American Nurseryman aimed at bringing such abuses to the attention of members of the horticultural trade organizations and to the Federal Trade Commission, to the end that such abuses may be effectively eliminated.

3. It is directed that copies of this resolution be given to the above organizations, and to additional groups or individuals who may be helpful in promptly and effectively eliminating these abuses of public confidence.

Resolutions Committee,
E. A. Farrington, Chairman
Bruce Krasberg, President, MGCA
Herbert Kahlert, Secretary.

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PEarl 1929

A GARDEN MAY BE ATTRACTIVE IN WINTER

By JAMES B. STEWART

And add to these retired Leisure
That in trim gardens takes his pleasure.—Milton

WE acquired a home in 1949 on a corner lot in Lakewood with a unobstructed view of the range from Long's Peak to Pike's Peak.

The first thing we did was to engage a landscape architect, Mr. Irvin



McCrary, to plan a garden for us. Mr. McCrary's blue print or planting plan enabled us to achieve effects which would have been otherwise impossible. For the next four summers we followed his blue print, gradually planting the trees, evergreens, shrubs, hedges, etc., all purchased locally. And so we were as pleased as Punch last autumn when Mrs. George Garrey, who had not seen the garden for some time, exclaimed: "Why all of a sudden your garden has reached maturity!" And so it seemed.

Remembering the fame of the "old garden wall" we then built a five foot fence and painted it white, the one by eight inch boards were so placed on opposite sides of the four by four uprights as to give a delightful effect in lights and shadows. The first board was nailed to the upright after placing it about four inches above the ground. The next one was placed on the opposite side of the upright about twelve inches above the ground, and so on. Mrs. Garrey admired the white fence which affords a background for shrubs and evergreens, gives a certain privacy, and pulls the garden together. In winter, of course, the twigs stand out in bold relief





against it and are multiplied by their shadows.

In one corner of the shrub bed are three Pinons and a Mugho Pine and we are grateful to Miss Jane Silverstein for suggesting them and to Mr. Scott Wilmore for selecting them. We were in a quandry as to which evergreens to plant in that corner until Miss Silverstein spoke up: "Well," she said, "you know, the Pinon is still my favorite." After that we planted three more of those attractive all-the-year-round trees and three Mahonia or Oregon Hollygrape, on the north side of the house with Vinca Minor or Periwinkle as a ground cover.

I have mentioned the white fence that frames the evergreens and the dormant shrubs in winter and, to further soften that "winter look," other inanimates were used. Instead of storing the peony hoops, they were painted pink, white and red and left right where they had been all summer. Furthermore, each pot that the Tuberous Begonias came in was

painted the color of a begonia, turned upside down, and placed here and there in the begonia bed. Thus we enjoyed a colorful corner all winter.

Other touches of color in our winter garden were the green plastic garden labels with the names of plants on them; the green painted garden wickets along the edge of the peony beds; and a few of the Cape Cod trims (miniature lattice) about six inches high.



Adjoining the ornamental garden is the vegetable and berry corner. The two gardens are separated by an area of gravel and red brick walks. These walks make as trim an appearance in winter as they do in summer. There are also stepping stones between the shrubs and the roses, and more of them throughout the shrub bed. Of course the grass must be clipped by hand around certain of the stepping stones but what's that to Mr. Leisure!

A daughter pointed out to us the value of inanimate objects in the garden. One winter's day in 1949 she remarked: "Don't overlook the inanimates." As you see, we did not. However, at the same time she warned against "overdoing the thing" and as I look back on the colorful pots in the begonia bed I wonder whether we did!

P. S. I almost forgot to mention that we have a bird bath. (As illustrated this could hardly be classed with the inanimate features.)



SUCCESS WITH HARDY CHRYSANTHEMUMS

By ROBERT O. PARK

BEFORE you can have a rabbit pie you must first catch your rabbit; so you must have good stock before you can have good chrysanthemums.

There are many varieties which are poor to mediocre, either in hardiness, growth, color or type or flower, or in amount of bloom produced. Again, there are magnificent varieties which are not suited to this locality (Denver) as their blooming period is too late.

In eliminating the late bloomers, we are thinking of the average gardener. The Green Thumber may advance the blooming period two weeks or more by using black cloth to shut out all light from 4:00 P. M. until 9:00 A. M. the last half of August,

and for a week or ten days in September.

Hardy mums are not too particular about type of soil. Both sand and heavy clay soils seem to produce equally well so long as they are in good tilth and have an average amount of enrichment, preferably of the organic type.

As with all other flowers, mums should not suffer for water during the heat of summer. Watch the leaves, and when they begin to turn a dark green and are dull looking, they need water. A good soaking is much better than a light sprinkling. If the leaves are a pale green with the lower ones slightly yellow, they are getting too much water. From the middle of July on, the mum plant

sends out stolons. These are heavy whitish shoots which will produce next year's growth. They are just beneath the surface of the soil, so in cultivating care must be used else they may be broken off.

Late spring is the best time for planting, and either root divisions or rooted cuttings may be used. So far as we know, all local nurseries sell the root divisions, which are the stolons mentioned above. Eastern nurseries sell the rooted cuttings, and the argument still goes on as to which is the best. Every third spring all mums should be dug and divided,



replanting the new stolons and throwing away the old center root. In planting, do not crowd, but set the new plants at least eighteen inches apart and the same distance from other plants. Crowding will produce spindly plants and you will be disappointed with the results. Then, too, do not plant in the shade, under trees or bushes, for mums like both air and sunshine.

A very important practice is what is called the "June pinch." To produce sturdy, well-branched plants,

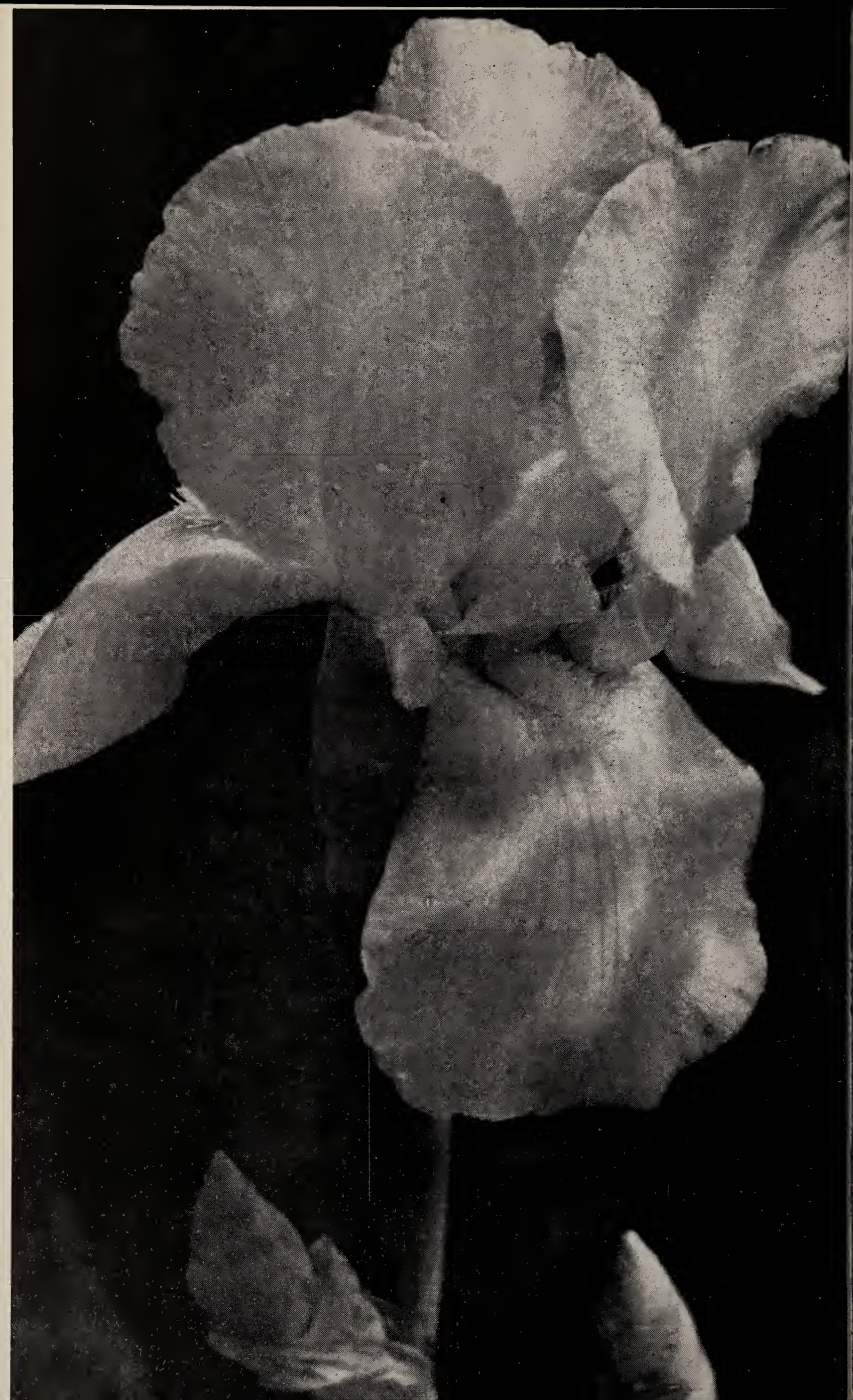
the terminal or tip bud of each stem should be pinched off when the stems are six or seven inches long, usually around the middle of June. This causes the stems to branch out from the leaf axils and to produce that much more bloom. Those who claim that their mums grow too tall and never bloom, will solve their difficulties with the "June pinch."

Mums need no winter protection if you leave the tops on until spring. This gives the crown some shade and helps to hold the snow longer, thus preventing the excessive thawing and freezing which causes winter kill.

The chrysanthemum is a fall flower and the finest varieties do not bloom until well into September. If you desire grand color in the garden clear through to the end of October, and some years until the middle of November, you must plant mid-season and late varieties. With these, many of the flowers and all of the buds are frost resistant. A freeze which can take all of your tender annuals and perennials will do little harm to the mums. If the flowers are damaged the buds will still open and within a week's time you again have beautiful bloom. You, then, are the envy of your neighbors whose early varieties have been shabby for a month or more.

"Mums" the word in the fall!





IRIS, THE HEART OF SPRING

By MR. AND MRS. O. T. BAKER

A GREAT many gardens are more or less static. The same old flowers bloom in the same old places. This year's garden is just like last year's and becomes more uninteresting year after year. Exercise your taste outdoors as you would indoors. Your garden is on display more often than your living room and deserves more "Flowers of Distinction" — IRIS, if you please.

Increasingly greater numbers of gardeners are being attracted to IRIS growing as an interesting and satisfying hobby, one which offers absorbing pursuits for all types and ages. Thousands of home owners are learning that they can extend the attraction and enjoyment of their modern environment by developing and beautifying their outdoor area with plantings of some of the newer and finer Tall Bearded IRIS. What is your favorite color?—you can be sure you will find it in today's IRIS. Hybridizers have wrought miracles in the past few years in developing many, many new colors and combinations, with improved size, form and substance. Few flowers have reached the highly developed stage which has been brought to the modern IRIS.

By growing several species, Arils, Dutch, Dwarf, Siberian, Louisiana, Intermediate and Tall Bearded, your period of bloom can be extended for many weeks. They lend themselves to any spot in your garden. Planted singly or in groups with your perennials or annuals, they will steal the show. They are easy to grow in most any soil, and once planted, they will thrive and increase naturally. You have your choice of many hundred varieties but select yours from the

"Symposium of One Hundred Best," published yearly, and you can't go wrong. They are priced to suit the beginner with a modest purse or the connoisseur with unlimited means. Many fine, fairly recent introductions can be purchased for a dollar or less. Start a collection, try hybridizing, but we warn you, it's a "virus" that will grow on you but one that will give you a new interest in life, reduce that waist line, put new sparkle in your eyes, color in your cheeks and give you less time for wasteful pursuits. The thrill one gets on those early morning visits to his garden, the sight of the dewy freshness of a newly opened IRIS blossom with its hauntingly sweet aroma, and their beauty at dusk when the last rays of sunlight accentuate the gentle tones of the Pastels, will surely make life seem more worth living.

Our garden contains nearly four hundred varieties of Tall Bearded IRIS, also Arils, Dwarf, Dutch, Siberian and Louisiana with color rivaling the rainbow. It's a wonderful place to take color pictures—come and bring your camera—they are all photogenic. Some of the newer flamingo pinks—Cherie, Ballerina, Happy Birthday or the deep chocolate browns—Pretty Quadroon, Thotmess III, Argus Pheasant or the luscious new yellows—Truly Yours, Lime-light or Illinois Sunshine, to name a few, make especially good subjects. They will soon be in bloom, usually around Decoration Day, and at their peak a few days later.

Our garden is open every day from dawn to dusk, including Sunday, so come anytime—you are welcome.

Baker's Acre, 7650 West Fourth Avenue, Lakewood, Colorado.

TUBEROUS BEGONIAS

By PHILLIP HANDWERK

THE exotic beauty of a planting of tuberous begonias in their gorgeous array of color seems to me to be unsurpassed by any other garden flower of today. They rate high as summer plant material because of their spectacular flowers, because they do well in spots of partial shade, and because with proper care they will produce blooms until frost.

Whether you prefer camellia, carnation or fringed and picotee type blooms, these lovable plants come in a wide range of varieties and colors. Blooms are of one color throughout except for the picotee type, which has deeper color in the margins. Flowers range in size from two to eight inches in some of the singles.

Contrary to popular belief, begonias are comparatively easy to grow.

The four main requirements are—partial shade, a loose rich soil, protection from wind, and moisture in the soil and air. Staking the plants early prevents breakage. Partial shade is usually obtainable on the north side of the house, or on the north or east side of trees and shrubs. Begonias need shade but must have air, and one can create an atmosphere for them by using camouflage wire or Saran cloth mounted over a pergola or frame work to exclude direct sun, but still allowing filtered sunlight.

Jefferson County soil must be prepared for begonias. In "gumbo", you will need to add about one-fourth sand, and a good supply of leaf mold or compost, along with a like portion of well-rotted cow or sheep manure. Sandy soil also benefits by the addi-

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tion of leafmold or compost along with the manure. All of these must be mixed thoroughly; spaded deeply into the soil.

You may start with your own tubers, or you will find that you can obtain blooming size plants from many local sources. We like to start ours, and have found the large tubers produce sturdier plants. Early in spring, place tubers, concave side up, in soil flats, vermiculite or peat as you prefer. Maintain a constant temperature of 55 to 70 degrees. Keep damp, and soon they will begin to form leaf buds. When well rooted and a few inches high, you can transfer them to pots, using the same soil mixture as for the permanent bed. You may transplant them to the yard either in pots or directly into the bed. Six to nine inch pots are best for the permanent planting. When setting out plants, see that the largest leaf points in the direction you want the plant to face. Stakes should be inserted by the time plants are eight inches tall, and secured with plant ties.

After begonias have been transplanted into their permanent beds, they do require much water. Sprinkle as often as you like, but it is not necessary to drown them. If your soil is prepared correctly, watering as often as twice a day will not be too much. Begonias are like ducks in that they revel in splashing and sprinkled water, be it rain showers or from the garden hose.

Begonias will give you all season bloom. The beautiful flowers and surprises they give you far excel the time and energy you spend on them.



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WATCH FOR THE PLANT
AUCTION

April 18, Saturday Afternoon

TREE REMINISCING

By J. M. LANCASTER

THERE are 1182 different kinds of forest trees in the United States. Oaks have some sixty species. Florida boasts 318 native and naturalized varieties. Texas, Georgia and California are next in order and North Dakota has the least varieties.

Several kinds need to be planted with others of the same kind in groups, as there are male and female of the species. Holly, persimmon, ash, and most maples are included in this class. This I gleaned from the U. S. Year Book for 1949 "Trees." There is much information in this book regarding our locality. We know that "Rocky Mountain Horticulture Is Different," but I have tried many varieties from other areas and found that some of them grow well.

Some 12-14 years ago, my brother sent me some hickory nuts, acorns and persimmon seed from central Illinois. The oaks and the persimmons are now 15 feet tall. The hickories transplanted poorly and grew much more slowly. The sheep seemed to like them and finished them. The persimmons are ornamental, but I would plant them closer together if I were doing it again, as they have not fruited. They were damaged some by our November freeze in 1950.

There are many walnut trees all over the eastern slope in northern Colorado. Walnuts which I planted in 1938 have been bearing several years. Buckeyes and horsechestnuts are also good trees and hardy when planted in the correct places. The same is true of the Kentucky coffee-

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tree, as one can see in our city parks.

I never saw the cork elm until I came to Northern Colorado about 35 years ago. It is a fine shade tree, but sprouts so badly that it becomes a nuisance. (Do you remember the kind of a tree the Irishman chose when given a choice of one to hang on?—Gooseberry).

The Moraine locust, a vase form thornless honey-locust (patented) is a tree worthy of planting in this area, and will tolerate our climate and soil. It does not produce seed, and the lawn will grow right up under it.



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SPIDER LILY


For those of you wanting to try unusual house plants, perhaps Mrs. E. A. Kehn of Arvada, Colorado has the answer. Her spider lily (*hymenocallis*) is over forty years old and has missed blooming only four times in all that time. Quite a record I would say, and as the accompanying picture shows, quite an interesting plant. No particular care was given in all this time or special feeding procedure, only an occasional replenishing of soil in the pot. Isn't that something for you arm chair gardeners who don't have the facilities for growing lilies in outdoor gardens to try?

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GOD PLANTED A GARDEN

By HERMAN G. HALSTED
Chaplain M.G.C.A.

God was the first Gardener and man has been trying to emulate Him ever since.

We learn from the Bible (Genesis II-8) that "the Lord God planted a garden eastward in Eden." It must have been a particularly beautiful spot because, scattered through the Bible, there are at least twenty references to "God's garden" or "the garden of the Lord." For example; in Genesis XIII-10 we read, "the plain of Jordan was well watered even as the garden of the Lord," and in Isaiah LI-3, "He will make her wilderness like Eden and her desert like the garden of the Lord; joy and gladness shall be found therein." God not only planted a garden but it was so beautiful that it was used as a basis for comparison when ever any particularly ugly piece of landscape was to be considered.

Did you ever stop to think what you are really doing when you plant your garden? It means that you are helping to perform one of God's most interesting miracles. Those seeds that you plant. They are actually containers of God's creative power, more wonderful than the atom bomb

or anything that the most advanced scientist can create. Dormant in those little dry seeds are miracles of life and reproduction known only to God. He, not you, will unfold those miracles into many beautiful blossoms and blooms. Without God's invisible help you can accomplish nothing. You may plant and cultivate and weed, but it will be God's miracle of reproduction that will produce the blossoms.

God planted the first garden and He is still the Master Gardener. If you will remember these thoughts, as you work in your garden, they will make you humble but, they will help you in your work.

"The kiss of the sun for pardon,
"The song of the birds for mirth.
"Man is nearer to God in a garden,
"Than any place else on earth."

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FLOWERS THAT INTERPRET THE SPRING

By HELEN FOWLER

YELLOW is the color of inspiration and it begins and ends the year in the garden. It is the very essence of spring. After the grays and browns of winter, there is nothing more refreshing than to see masses of Forsythia draping the fences and walls as we drive along the avenues of Denver.

Pansies in purple and lavender shades might be planted with daffodils for a bright spring picture at the feet of this fickle yellow shrub. As the long leaves of the daffodils wither they may be caught down and hidden among the pansy blooms. If the dead flowers of pansies are removed each day, the little "funny faces" will carry on well into summer when they can be replaced with any favorite annual. In Tulip time, *Alyssum saxatile compactum* will be coming on, a carpet of yellow, for sunny places in rich soil. This plant must be cut back after flowering. Failure to do so will make an annual out of one of our finest hardy plants.

That attractive plant of the wilds, *Phlox divaricata*, with foot-high sprays of graceful blue flowers, add-

ed to yellow *Primulas* makes a special planting for spring shade, but English *Primulas* alone hold the banner for spring in shade areas. There is never enough *Phlox divaricata* to go around yet it is easily increased by division and also from stem-cuttings made from new growth after flowering.

Doronicum, the tallest of the early perennials is not too well known. It deserves wider use in our borders as the first yellow daisy of spring. During July and August this plant disappears, but in September new growth begins, and it is then that divisions may best be made.

No late spring picture would be complete without our blue *Columbine* (*aquilegia coerulea*). It likes sunless places and acid soil. By growing it in peatmoss (which provides the acid), the bloom can be twice the size it usually is when raised in ordinary soil.

These flowers furnish only a part of our early spring beauty and give a promise of what, with right choosing, is sure to follow.



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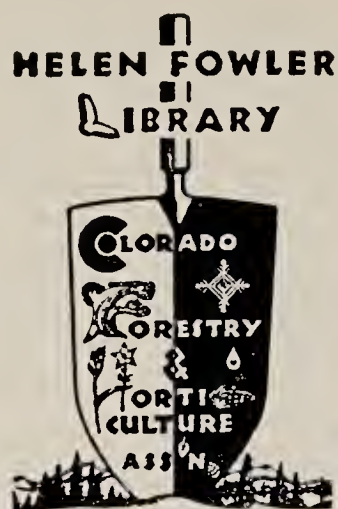
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Red Thumb Garden Club.

Mrs. Helen Fowler, 10,000 W. 44th Ave.,
Wheatridge.

Mrs. Henry J. Conrad, 4741 Pierce St.,
Wheatridge, in memory of Elsie Bacher.

HELEN FOWLER'S FUN

All you who know Helen Fowler know how she works and works and works (!) for the Association and is always planning something to give someone pleasure and a little something, besides! She has (her latest project!) had a number of tickets printed which many of you have bought for the drawing to be held at Horticulture House on Monday, morning April 20, at 10 a.m. It won't be necessary for you to be present to win these prizes, roses—50 No. 1 plants donated by the W. W. Wilmore Nurseries, and 100 perennial plants and bulbs will be donated by the Shadow Valley Gardens, and believe me, these are all good materials and much wanted by all good gardeners. Tickets may still be had, and if you don't know anyone who has them, they may be procured here at Horticulture House.

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What Are Herbacious Perennials?

Plants with a root-stalk which lasts several years, increasing yearly. Fresh growth springs from the root-stalk each year.

Daffodil—A favorite of the poets.

Shakespeare speaks of:

"Daffodils, that come before the
swallow dares
And take the winds of March with
beauty."

Wordsworth reflects that even the memory of them is joy:

"And then my heart with pleasure
fills
And dances with the daffodils."

Explain the meaning of the word "loam."

Is it sand, clay or what? No, loam is not gravel, muck, sand nor clay. Its grain is coarser than clay and it is finer than sand. Loam is really top-soil. It's a medium grade soil containing organic matter. Bailey says, "Those plants which favor clay and will not thrive in sand or those which demand sand and do not grow

in clay are usually successful handled in loam." There are texture grades often spoken of as sandy loam or clay loam. These denote an excess of one of these constituents—in popular usage loam implies the presence of considerable decomposed organic matter.

Liquid Manure:

What kind of fertilizer is used to make liquid manure and why is it valuable? Any kind of manure may be used—cow, sheep, chicken—but it must be dried or rotted, never fresh.

The danger of using liquid manure is that too much will be put on at one time or in too strong concentrations. It should not be applied more often than once in 10 to 14 days. Feed generously the naturally quick growing plants, but give less to slow growing species. On house plants do not use oftener than once a month.

A Few Formulas for liquid manure:

Cow Manure. $\frac{1}{2}$ bu. to 50 gal. of water (or 3 gal. of water to 1 dry qt. of manure).

Sheep Manure. $\frac{1}{2}$ bu. to 60 gal. of water (or 4 gal. of water to 1 dry qt. of manure).

Horse Manure. $\frac{1}{2}$ bu. to 40 gal. of water (or $2\frac{1}{2}$ gal. of water to 1 dry qt. of manure).

Stir the mixtures once a day for a week before using, and keep liquid off foliage.

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In small gardens many plants may serve both for flowers and fruit. Cherries make beautiful ornamental trees. Some apples, plums and especially Dolga crabapples may be planted for their landscape effect as well as to produce fine fruit.

What you **SHOULD NOT DO** is to rake off all the fine accumulated duff from under the trees and shrubs nor cut many of their roots by deep cultivation just because you feel ambitious.

Notice how nature does it the next time you are in the hills and "Go thou and do likewise."

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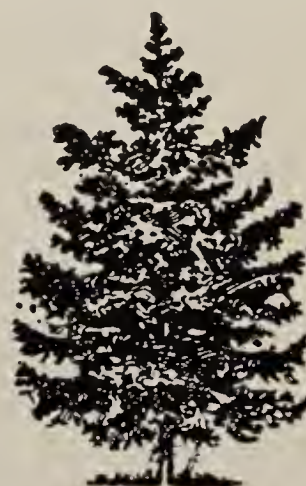
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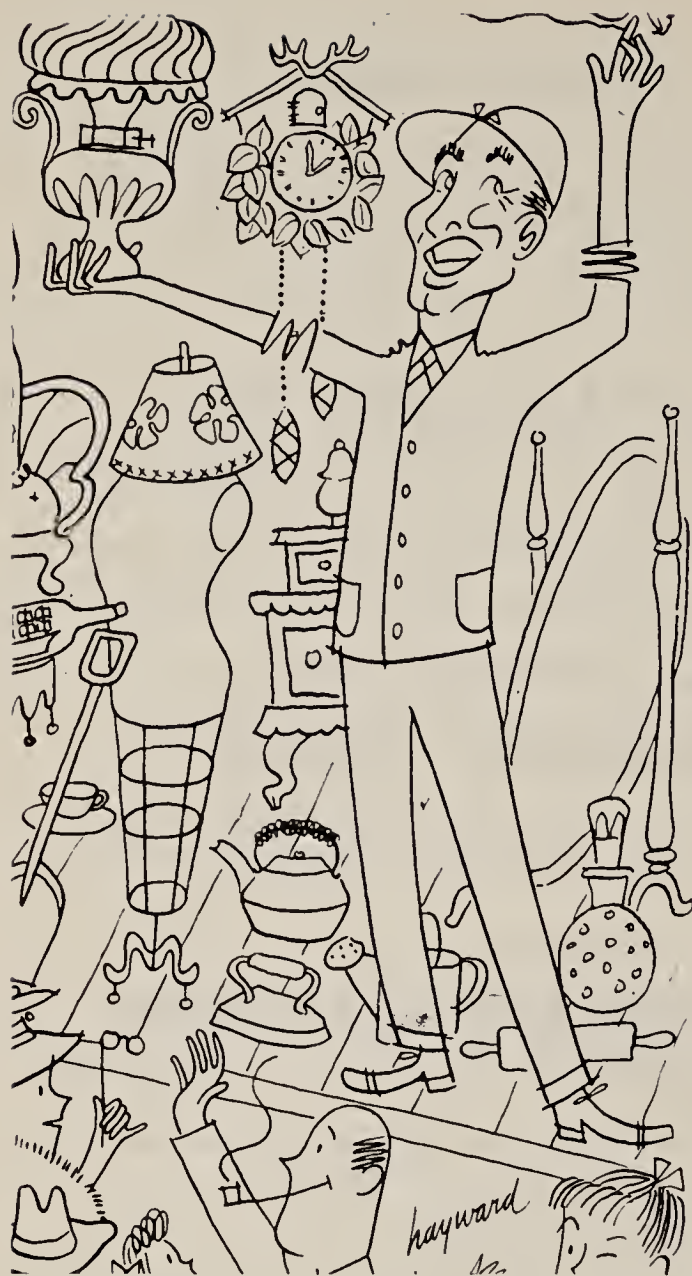
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Our favorite auctioneer will be at our **SPRING AUCTION**, to be held as usual in the parking lot back of Horticulture House on Saturday Afternoon; 1 P. M. is the time! Those of you who have attended these auctions know what fun we have and also the wonderful plant material, which is donated by the local nurserymen and local seedsmen, and others interested in furthering the work done by Horticulture House. We depend on these auctions to raise a sizable portion of our working funds, and we do appreciate all the time and material furnished by these loyal friends.

Come, **SEE AND BUY!**

We're sure there will be something which each of you can use in your gardens, and which can be had at a saving to you!!

A MERION BLUE GRASS LAWN

By J. L. HAINES

Recent publicity has helped create the idea that Merion Blue Grass is a miracle grass and the answer to all our lawn problems. This is, unfortunately, not the case. Merion is a superior turf grass only when properly cultivated.

This proper cultivation involves following a few simple rules:

1. Merion requires less water than the usual lawn grass. (Daily watering may actually kill it.) After it has passed the seeding stage, watch it closely, and water it only when necessary. (If your grass lightens in color, and if the soil begins to harden, it's time to turn on the sprinkler.) Then, when you do water, give the lawn a thorough soaking and make sure that the surface moisture contacts the subsoil moisture. This soaking will encourage deep root growth.

2. Fertilize Merion Blue Grass generously. It will thrive on two or three times as much fertilizer as you are accustomed to using on your lawn.

3. If you have an "expert" sow your lawn, one pound of seed per thousand square feet is usually satisfactory. But if you want to do it yourself—and most of us aren't experts—two to three pounds per thousand square feet will probably be necessary to assure you of an attractive lawn.

4. Keep your Merion lawn closely mowed—about $\frac{1}{2}$ inch is best.

If you follow these simple rules, Merion Blue Grass will give you a lawn to be very proud of. But remember that unless you follow the rules, lawn planting with this particular grass can be a very expensive, exasperating and discouraging project.



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At the nursery we always take up the old plants in the spring, when they begin to grow, and divide them several times before replanting. Be sure no water is allowed to stand at the roots of your plants in winter. This will cause rot and sure death will result.

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April 18, Saturday Afternoon



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PARASITIC PLANTS



THE plants that live on other plants and do not manufacture their own food from the chlorophyll in their leaves are always of interest. Many of the orchids are partially or wholly parasitic. There are several plants like the Broomrape, which, by their color, indicate that they are parasites on the roots of some other plant. The lack of real dark green in their leaves or stems indicate a dependence on the growth of other plants for their life.

Mistletoe is one of the common examples of this parasitic growth. In the south the beautiful mistletoe used at Christmas time will grow on Gum, Oak or other trees and becomes a commercial plant. Coming into the southern edge of our mountain area the mistletoe is seen in large evergreen clusters on the cottonwood trees.

The kind of mistletoe generally found in our area is not the handsome kind and grows on evergreen trees, chiefly the Lodgepole Pine and occasionally the Limber or Yellow. In the western part of the area it is seen on the Juniper trees.

It is yellowish in color throughout and has only tiny bracts to take the place of leaves. It is seldom seen in fruit, and is not particularly handsome. When fruit does form it consists of small transparent, sticky berries, which will stick to a limb when dropped by a bird and take root into the tissues of the host plant where it will rob the sap from the sapwood, until in some cases it kills the host tree.

There are few places where it has spread enough to be any serious menace to timber, and it does form an interesting subject for botanical study.

Calypso orchid

WHAT MAKES A ROSE?

By E. L. D. SEYMOUR

(Extracts by Permission from Story
in American Home)

What makes a rose? Why, the same two complex factors that determine the nature and fate of every living thing—heredity and environment. Heredity, involving genetics and genealogy is, of course, the field of the rose breeders, hybridists, and producers. Environment includes not only location, climate, and soil, but also the cultural operations—planting, feeding, pruning, watering, etc.—that are the responsibility of rose growers, who may be commercial, or professional, or even amateur gardeners, like you and I.

Vital elements of environment are proper planting and care. Sunlight for half each day and at least an average good soil are musts. Make a roomy hole a foot deep; dig humus and well rotted manure into the next foot of soil and mix thoroughly; support the bush in the hole with graft swelling (union) at soil level, (or below) and spread roots out naturally, in cone shape and in all directions.

Start filling in topsoil, working it around and between with fingers or blunt stick. Add more, firming it well with the hands, then by treading, until hole is about three-quarters full. Pour on a pail or so of water, and let it sink in before filling hole level full with soil which is left loose, not firmed. Don't use fertilizer at planting time; save it for surface feeding later on when plants are growing well.

Mound up soil 6" to 10" high around each plant to prevent drying and dying of canes while roots take hold, and until new growth starts.

WATCH FOR THE PLANT
AUCTION

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Above: Coral Root

Below: Broom Rape



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APRIL GARDENING

PLANTING: The transplanting of trees and shrubs should be drawing to a close, unless entirely dormant stock, which has been stored in a good cellar, is available. Perennials can be moved at any time if some soil is left around the roots and they have not made too much growth. Many of the annuals are easily killed by frost so it is wise to wait until after Decoration day to set them out. It is still not too late to start some seeds of annual flowers and vegetables indoors or in a cold frame.

Take time to prepare the soil thoroughly before planting anything. It will pay in increased vigor and hardiness of all plants. Work in 20% to 30% humus of some sort—peat, manure, leafmold or such—and mix it thoroughly to as great a depth as your strong back will permit.

When everything is dormant is the time to get out those notes and plans that you made last summer or when the snow was blowing. If you plant according to these previously made plans it will simplify your work now when everything is dormant and hard to visualize.

WATERING: Water whenever the soil is dry. Don't get into a routine of every-other-day watering yet. At this time of year, especially, it is important to not water until plants do need it, for now is the time to train the roots to go DOWN for their moisture. To tell when soil needs water, dig in with a knife, pencil or trowel and see. Deep rooted plants like trees and shrubs should have the soil soaked to a greater depth than for shallow rooted plants such as bluegrass.

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SPRAYING: Dormant spraying with lime-sulphur or oil emulsion should be under way now on every day when the temperature is well above 40 and there is little wind. Most Junipers and Spruce will benefit from a dormant spray and trees and shrubs affected by scale insects can be treated now. Check your Elm, Ash, Maple, Dogwood, Cotoneaster and Lilacs now for scale insects. The destructive aphids of Junipers sometimes begin work this early and may do considerable damage. Check your Colorado Junipers for evidence of the Cedar-Hawthorn Rust.

PRUNING: Almost any of the deciduous trees can be pruned now except the Maples, Walnuts and Birch. These bleed slightly when pruned at this time. Emergency trimming can be done now on flowering shrubs, but hold any extensive pruning needed until after getting the benefit of this year's bloom. Clean up the ragged stalks of last year's perennials and annuals.

FERTILIZING: The organic fertilizers can be put on at any time now as a mulch, for in general they are slow acting and, unless used in excess, are not likely to burn anything. Chemical fertilizer should be used, when needed, in small quantities and carefully watered in. It is most economical to use these quickly available fertilizers when the plants are growing and ready to use the elements in them. They will leach into soil where plants are already growing and stimulate their growth but can never take the place of organic material that should have been worked into the soil before planting.

MULCHING: This is taking the place of cultivation whenever possible. It is more like Nature's way. It protects the surface of the soil and allows a natural absorption of water and air. Larger weeds that come up through it can be pulled or mowed off. It is especially important to have a complete mulch of grass clippings or humus covering the soil around lawn grass plants. Many weeds of lawns can not grow unless bare soil is present. Remember, if you take good care of your lawn during April and May so that it develops deep roots, it will be able to go through July and August with little damage.

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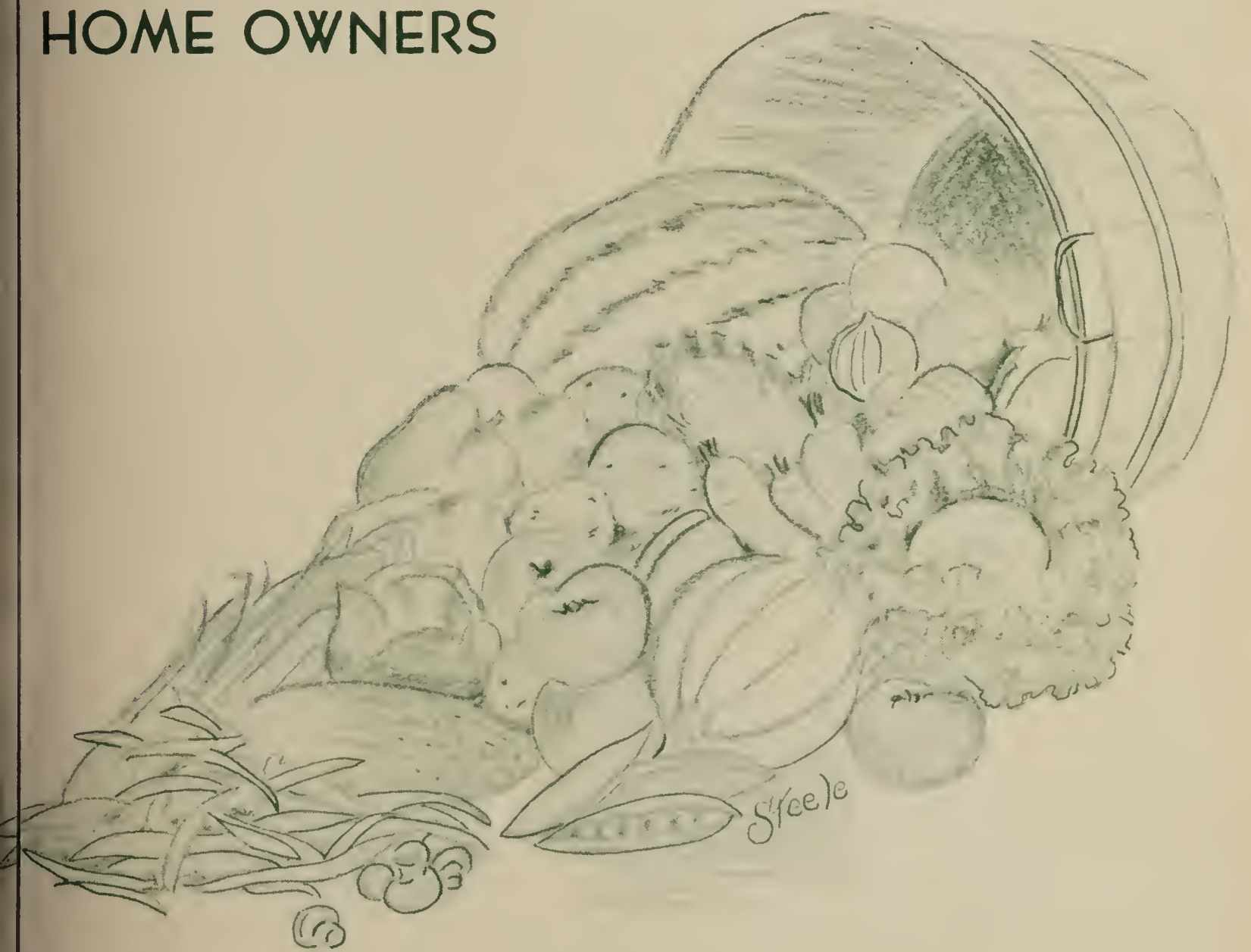
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The Green Thumb

Vol. 10

MAY, 1953

No. 5

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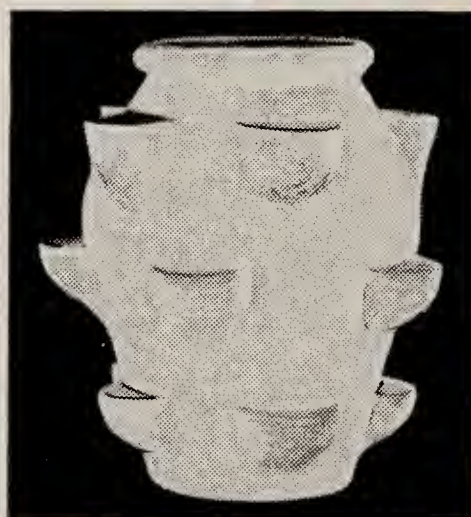
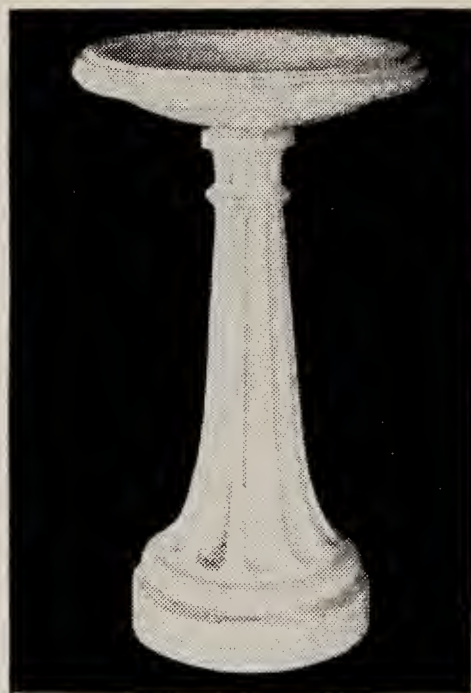
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APEX MONUMENT CO.
Denver, Colorado



denver terra cotta co., 135 tejon st., denver, color



Colorado Forestry and Horticulture Association
Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

OFFICERS

President.....Fred R. Johnson
Honorary President.....Mrs. John Evans
Vice-Presidents—Mrs. A. L. Barbour, Mrs. Robert Perry, Mrs.
Geo. H. Garrey, Milton J. Keegan, S. R. DeBoer, Dr. Moras
Shubert.
Secretary-TreasurerMildred Cook
Editor.....George W. Kelly

MAY SCHEDULE

- May 3, Sunday. Jackson Creek. Leaders, George Kelly and John Berrick. Through Sedalia, on Perry Park and Jackson Creek Road, across valley to high up on the ridge. Road comes out on Rampart Range Road near Devil's Head. Flowers should be plentiful by then.
- May 10, Sunday. To Boulder to see private and commercial gardens. Leader, M. Walter Pesman. All day trip. Short hike to see wild flowers in the afternoon, possibly up Bluebell Canyon.
- May 13, Wednesday, 8:00 P.M. Organic Gardening Club will have its Annual Meeting and election of officers.
- May 17, Sunday. Hamlin Gulch. Leader, Anita Murray. Lake Pisgah across ridge to Nevadaville, past ancient Bald Mtn. Cemetery, Caribou and Central City. Here is where the Pasque flowers abound.
- May 21, Thursday, 8:00 P.M. John Berrick's pictures taken in the Rocky Mountains. Many wonderful flower slides. At Horticulture House.
- May 24, Sunday. Stevens Mine and Kelso. Leader, Bill Reed. Via Georgetown, Silverplume and Bakersville road out of Bakersville. May be possible to drive within a mile or two of the "boarding house" by side of the road. This is a nice overnight trip, also.

May 30, Saturday, through June 6, Saturday. Mesa Verde National Park. Leader, Clair Cashmore. Southwestern Colorado through Cortez to visit the prehistoric Indian Cliff dwellings. Into Utah via Blanding to Natural Bridges Monument (if time permits). Return via Monticello, Moab, for a quick view of Arches Monument and home via Grand Junction. Details and expenses to be worked out. Sleeping bag, tents, all the way.

For More Beautiful
Trees, Shrubs and
Gardens . . .

LISTEN TO

GEORGE and SUE
KELLY

ON

"THE GREEN THUMB"

NOW AT 8:15 A.M.

SATURDAYS

CBS—KLZ—560

DON'T MISS THE HOME SHOW !!

This month Denver's HOME SHOW will be in progress at the Denver University Arena and Field House, May 10th thru 17th, afternoons and evenings. This year the producers of the show (Denver Association of Home Builders and The Denver Post) felt that the outside of the home was to be considered as well as the inside—so, at the show, you will find the Garden Clubs participating with the booths, and arrangements in the model home on display, along with the exhibitors. The Garden Clubs were given this opportunity free of charge by the producers, in order that the show would be more colorful, and help the new home owners with ideas on outdoor beautification as well.

This is certainly a new approach in interesting the new home owner and very worthwhile. Mr. George Kelly, of Horticulture House, will have two talks with colored slides each day, as part of the show, giving information on the best practices in gardening, the materials to use here in our Rocky Mountain area.

Dates: May 10 through 17.

Hours: May 10, Sunday, 2:00 P.M.-11:00 P.M.; May 11 through 15,

6:00 P.M.-11:00 P.M.; May 16 and 17, Saturday and Sunday 2:00 P.M.-11:00 P.M.

Place: Denver University Arena.

Sponsors: Denver Association of Home Builders and *The Denver Post*.

Special Features: The full-scale model of "High-Country Home" for your future, designed by W. C. Murchow.

And for Gardeners: Flower arrangements for the Model Home will be made by:

Home Garden Club
Fun With Flowers
Floral Art Club
Green Thumb Garden Club
Garden Club of Denver
Suburban Garden Club
Crestmoor Park Garden Club
Golden Gardeners
Brown Fingers Garden Club
Mountain View Park Garden Club
Open Gate Garden Club
University Park Men's Garden Club
Denver Rose Society
Arvada Garden Club
Park Hill Garden Club

Also: These garden clubs will be booth exhibitors:

Colorado Forestry & Horticulture Association
Denver Rose Society
Denver Orchid Society
Floral Art Club
Berkeley Garden Club
Organic Gardening Club of Denver
Green Thumb Garden Club
Open Gate Garden Club
University Park Men's Garden Club
Garden Club of Denver
Fun with Flowers
Hillcrest Garden Forum
Columbine Garden Club
Golden Gardeners

And: George Kelly will be on hand with his color slides and his garden-advice.

Handsome pair of unusual Italian pottery ornaments for the distinguished garden. Large assortment of brass, copper, and wrought iron planters—both antique and modern.

PONY EXPRESS SHOP

DExter 0916

1502 Kearney at Colfax, Denver



LITTER-ITIS

By WILLIAM F. CLARK

"Let it not be said, and to your shame,
That all was beauty here until you came."
I read these words upon a public site
Where picnickers and campers had a right
To taste the air, to stir their souls to see
What wondrous beauty nature made for me.

On closer glance I saw the sign was scarred
With jack-knifed letters, foul verse, and marred
Beyond repair; what reason can there be
That everything that man can touch and see
Must bear his name, must show his mighty power,
Must be despoiled in every passing hour?

Why must old cans and bottles come to rest
Where lovely flowers and ferns are at their best?
Why must the ground with littered trash be strewn
And Kleenex every lovely bush festoon?
Why must we try to ruin all we find
Of Beauty in the world or heart or mind?

I packed my gear, I could not stay for long
Where men with thoughtless minds had done this wrong.
They'd robbed my pleasure, stolen all I need
To soothe my soul. That entrance sign should read
"It must be said, and ever to your shame,
That all was beauty here until you came."

By permission from "The Cornell Plantations"
Volume IX, Number 2





Drawings here and on front cover by Mildred Steele.

THE COLORADO VEGETABLE BASKET

By HERBERT GUNDELL,

Denver County Agent

VEGETABLE gardening is one of the most enjoyable home garden activities for the amateur, not so much because of economical reasons, but because it provides an excellent way to exercise the muscles that are very little used sitting behind an oak desk. Many vegetables can be grown very successfully in a small home garden. Garden vegetables ask for little extra care, but they do require a nice loose and well-prepared garden soil to do their best.

To lay down some of the ground rules, I would first of all mention that the home gardener should try to devote most of his attention to the crops that can be used for salads, and that otherwise do not take too long to mature. Such things as leaf lettuce, radishes, green onions, and tomatoes are some of the best salad bowl vegetables. Other good ones for most home gardens are: carrots, spinach, peas, beans, squash, and sweet corn. Spinach, carrots, and radishes could

have been planted a long time ago, but it is still a little early to plant some of the tender crops like beans, tomatoes, and squash out of doors. Tomatoes and green peppers should not be planted out of doors much before June 1, for it is not unusual in this part of the country to receive six or eight inches of snow the last week of May.

Another secret about tomatoes is that they should not be watered when they are in bloom and are setting fruit. At a time like that, irrigation produces blossom-drop and very meager or no fruit-set at all. Sweet corn should always be planted where it will not shade other vegetable crops, preferably along the north side of the vegetable garden. It is best to run rows from east to west to take advantage of a maximum of sunlight. Squash are also very wonderful and prolific garden vegetables, and summer squash are really my favorite.

Where space is limited, I find it

unwise to use it up with crops like cabbage or cauliflower. Crops like these take a long time to mature and can be bought very inexpensively at any vegetable counter when they are in season. I would rather put more weight on crops like tomatoes, beans and sweet corn which are really better out of your own garden than from the grocery stand. It is easy to plant different rows of corn at progressive dates in order to have sweet corn over a long summer period. Tomatoes are



the number one garden vegetable in the Denver area and obviously so because they really produce well here and are of such delicious quality. A list of recommended vegetable varieties follows, which this writer would like to submit for your consideration. These vegetables have been grown successfully in the Denver area and have produced excellent results throughout:

Asparagus: Mary Washington
 Beans: (green) *Contender, Top Crop, Stringless Black Valentine, *Wade.
 (wax) *Puregold
 (pole) Kentucky Wonder
 (lima) Fordhook 242
 Beets: Detroit Dark Red, Perfected Detroit
 Broccoli: Calabrese, De Cicco
 Cabbage: (early) Copenhagen Market, Golden Acre

(midseason) Enkhuizen Glory, Danish Ballhead
 (garden) *O-S Cross
 Cantaloupe: (early) *Granite State (75 days), Hales Best No. 45
 Carrots: Coreless Nates, Danvers Half Long, Imperator
 Cauliflower: Snowball
 Celery: Golden Self Blanching
 Sweetcorn: (early) *Golden Rocket, Mar-cross C6xC13, Goldrush, Seneca 60
 (midseason) *Iochief, Golden Security, Golden Cross Bantam
 Cucumbers: (slicing) *Surecrop, Burpee Hybrid, A & C
 (pickling) Colorado Pickling, National Pickling
 Egg Plant: Florida Hibush
 Kohlrabi: White Vienna
 Lettuce: (leaf) Bronze Beauty, Grand Rapids, *Bronze Medal
 (head) Mignonette (home garden), N. Y. No. 12
 Onion: White Sweet Spanish, Yellow Sweet Spanish, Yellow Globe Danvers
 Parsnip: Hollow Crown, *Wands
 Peas: (early) Burpeeana Early Dwarf, *Freezonian, Little Marvel
 (late) Aldersan
 Peppers: California Wonder, Calwonder Early
 Pumpkin: Early Cheyenne Bush
 Radishes: *Cherry Belle, *Burpee White, Early Scarlet Globe
 Spinach: Bloomesdale Savoy, *America
 Squash: (summer) *Caserta, *Uconn, Early Prolific, Straight Neck
 (winter) *Butternut, *Buttercup, Hubbard
 Tomatoes: Marbon, Earliana, Marglobe, Burpeeana Early Hybrid, Fordhook Hybrid, *Urbana
 Turnip: Purple Top White Globe, Purple Top Strap Leaved
 Watermelon: *New Hampshire Midget (75 days)
 * All-American Selections

Kriliun can now be bought in Denver. But at the present price the same results ought to be possible by buying organic matter for soil improvement. Commercial distribution looked for in 1953.

Now 'tis the spring and weeds are shallow-rooted. Suffer them now and they'll o'ergrow the garden.—Shakespeare, *King Hen. VI*, pt. 2, III, i, 31.

LAWNS, THE CARPETS OF THE GARDEN

Start Them Right and Save Work Later

From "Rocky Mountain Horticulture is Different"

MORE lawns suffer from lack of soil preparation than all other difficulties put together. If the home gardener would plant his lawn in good, productive soil such as a farmer or truck grower would expect to produce profitable crops in, he would not have the constant worry and expense of fertilization and weed eradication that are common lawn problems. Some gardeners feel that if \$200.00 were available to put into a lawn, the money could best be spent by using at least half of it to improve and prepare the soil in advance of planting. In many of the newer homes a lawn is planted in the "contractor's soil" which is left around a finished building. In probably nine out of ten cases this soil is nearly worthless, made up from sub-soil taken from the basement excavation liberally mixed with plaster, lime and various rubbish from the building operations. Frequently this soil has been run over with heavy trucks while wet and is in poor physical condition.

Although a lawn is always considered imperative to a homeowner, there is usually little or no money left after the unexpected expense of building. Thus, a homeowner feels he has to do the work himself or accept the lowest possible bid to put in a lawn. What usually happens is that the poor soil is leveled off and the surface scratched sufficiently to allow the seed to be covered. Perhaps a surface covering of fertilizer is given and the grass manages to get a start. For the next twenty years or so the homeowner finds a continual fight on his hands to keep the grass watered, fertilized and reasonably free of weeds—

a terrible price to pay for a hit-or-miss preparation.

Preparation of Soil

Proper preparation of the soil for putting in a lawn should include a careful inspection to discover rubbish and areas of poor soil which are too poor to be made over. The very bad areas should be removed and good soil brought in to replace it. While moving dirt is always expensive, when it comes to improving the soil preparatory to putting in a lawn it is money well spent.

Rough Grading

After the elimination of poor soil areas the next procedure is to rough grade the ground. This should be carefully worked out to allow drainage away from the buildings and avoid low pockets where water may stand. It is well to have the ground staked out with surveyors' instruments if there is any doubt as to slope. A minimum of one-fourth inch slope per foot is usually desirable. In most cases a very steep slope should be avoided. Sometimes a wall may be necessary to eliminate the necessity of an awkward slope. It also should be recognized that sometimes a slight change of level could be worked out to add interest to an otherwise plain surface.

Fertilization

The next procedure is to work a considerable amount of humus into the soil. Whether it is manure, leaf mold, peatmoss or compost there are few soils that this treatment will not benefit. Humus helps to lighten a heavy or clay soil and in the case of light, sandy soils improves absorption



of water. The first application of humus may be of comparatively rough material but it should be thoroughly mixed with the soil. A cubic yard of this organic material to every 1,000 square feet of lawn space would be suitable in most cases.

Some gardeners prefer to apply a chemical fertilizer in the place of organic material and avoid the chance of introducing weed seeds. This can be done if care is taken not to over-fertilize. It should be remembered that many chemical fertilizers are highly soluble and though they act quickly, they are soon gone. Chemical fertilizers are usually most effective when applied in small quantities and at frequent intervals. If the soil is highly productive no extra stimulation may be needed.

Finish Grading

With preliminary grading and fertilization out of the way it is time to start the finished grading process. This is the place that a cheap lawn-maker begins and cuts the cost in half at the expense of a good lawn. Preparing the final grade and raking can be fun if you enjoy taking a rough piece of ground and molding it as a sculptor might. While some of the preliminary work may be done with power tools, it is hard to get away from the final hand raking. If this raking is carefully done the soft spots will be rather well compacted so that there will be little sinking after the seed is sown. It is well, however, to run over the area with a lawn roller even after it looks to be in perfect condition, checking to be sure that sunken spots do not develop. In most

cases this is the only use for a roller in lawn making. If the seedbed is too loose the grade may still sink out of shape. On the other hand, a too-firmly compacted seedbed will often resist the entrance of water and cause some surface erosion. Many a home owner makes a practice of rolling the lawn after the seed is in, and while this has a tendency to make the job look well, it often makes watering difficult.

Seeding

After the area has been properly prepared, rolled and checked, the surface should again be loosened with a light raking prior to sowing the seed. The seed may be broadcast by hand in small areas or various types of seeders may be used. The important thing is to have the seed evenly distributed, and this is rather difficult to do by hand. Rate of seeding varies from four to ten pounds of Bluegrass seed for each 1,000 square feet of lawn. Another very light raking with just the weight of the rake will allow the seed to be slightly covered. Then a light top dressing of some well-rotted manure, peat or compost will make the watering job easier and perhaps give a bit of stimulation to the grass. Heavy applications of commercial fertilizer should be avoided at this time.

Watering

Immediately after the seed is in the ground and the manure or peat for the surface mulch is applied, the area must be carefully watered. Many gardeners prefer to do this first watering by hand so that it is done thoroughly with no soil erosion. Once the planted soil is wet, great care should be taken to keep especially the surface soil from drying out, at least until the lawn is well started. No actual watering rule can be given for this process because soils and temperature very con-

siderably. Conditions may require watering once, twice or three times a day. As the grass begins to creep up, the water should be gradually done less often but more thoroughly. The important consideration in watering now is to see that the moisture gets into the lower soil.

Thorough preparation before planting and proper watering are the most important considerations in building a good lawn. When the roots of a suitable grass are forced to go deeply for food and moisture there is usually a dense top growth which will discourage most of the weeds and pests of lawns.

Organic Fertilizers

Everyone who is considering putting in a lawn should acquaint himself with the qualities of a good fertilizer. Needless to say thousands of dollars are spent every year on almost worthless materials. Some fertilizers are known to be loaded with weed seeds, though chemically they are quite rich; other materials may have had the weed seeds "cooked" out of them and have also lost much of their chemical value. Sand, sawdust or just plain dirt may so dilute other fertilizers that they have actually little value. Another factor the gardener should become familiar with is topsoil.

The term "topsoil" has been much abused and may mean anything from common dirt to very rich manure. Topsoil should apply only to soil taken from the upper few inches of virgin land. It is the sort of material that all lawns, if it were possible, should be built on in the first place. Another thing to remember is that it can do comparatively little good when applied in a thin surface layer.

There is no question but what commercial fertilizer, when applied properly, will benefit a lawn. However,

its action is generally temporary and does not in any way take the place of good soil, properly prepared. Lawns built in good soil and properly watered have gone for many years with no additional fertilizer and still remained dense and weed free.

Best Seeding Practices

The proper time to seed a new lawn is a subject of much discussion. In general the best times of the year are after the soil warms up in the spring and before the weather gets severely hot, or the fall period after the weather cools and before severe winter. This means, in much of the Rocky Mountain area, the period from April through June and from the middle of August to the middle of October.

The kind of lawn seed used is very important. Many people with lawn experience in this area have come to the conclusion that straight Kentucky Bluegrass is most satisfactory, however some prefer the addition of a small amount of White Dutch clover. This merely depends on individual preference. It is true that the clover will start quickly but it may make a spotty lawn. A small amount of Redtop may not harm a lawn, but it seldom is beneficial to it. Ryegrass has been used in mixtures, but it is a coarse grass which adds little to the value of a lawn. The Bent grasses make fine, dense carpets for certain requirements, but are generally difficult to establish and maintain. It should be noted that experiment stations are working on improved grasses which may be available in a few years. For very dry conditions, where little water other than rainfall is available, and where it is not necessary to mow the lawn very often, some of the native grasses such as Wheatgrass or Buffalo grass may be used. There are some grasses which spread from un-

derground runners like the Bermuda or "Salt Grass" which may be adapted to lawn use under certain conditions.

The new Merion Bluegrass has received much favorable comment by those who have tried it. It seems to combine many of the good qualities of both Kentucky Bluegrass and the bent grasses. A litele investigation of grasses which have succeeded in each locality will demonstrate those most suitable for varying altitudes and exposures. It should be kept in mind that there is some kind of grass which will grow in almost any part of the Rocky Mountain area where there are human dwellings.

After a lawn is well established, watering becomes the most important maintenance chore. Probably the greatest mistake made in lawn care is that of watering too frequently and not enough applied at one time. This generally uses more water and at the same time produces a lawn which is shallow-rooted and not able to stand difficult weather or weed competition. Watering by hand seldom does the job properly, simply because few people have the patience to do it thoroughly. While overhead sprinkling does freshen a lawn, it is bad practice to train it to expect moisture and nourishment in the two top inches of soil. Shallow watering allows the soil to dry out quickly and it actually wastes water.

Mowing is another perennial chore in the maintenance of a good lawn. There is always some discussion among gardeners as to the proper height to mow a lawn and whether the clippings should be removed. Experience has shown that it is usually better to cut the grass fairly high—about 1½ inches. There are many reasons for leaving all the clippings possible on the lawn. Clippings do create a mulch to hold moisture and keep the surface of the soil loose.

WHAT'S A WEED?

Drawings by LORENE SMITH

HAVE you ever carefully watered and guarded tiny seedlings in your garden to find out later to your dismay that they were weeds and had taken your garden? Here are 15 to be sure to pull!

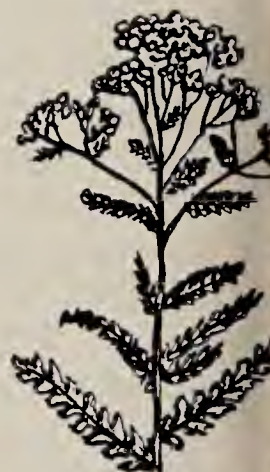
LAMBS-QUARTERS. When young is a more palatable green than spinach. Seeds readily, so is found everywhere. Easily eradicated from lawns by regular mowing. →



DANDELION. When found in mountain meadows it is called "Taraxicum officinale," but when found in lawns it is called x?!xx. With 2,4-D it may be easily eliminated. Public lawn enemy No. 1. ←



YARROW. In a lawn it may establish itself as an almost complete mat. Is found as a native plant from the plains to the tops of the highest mountains. Eliminated by cultivation or spraying. →



COMMON PLANTAIN. Public lawn enemy No. 2, Usually found in poor soil, or overwatered, shady lawns. May now be eliminated with 2,4-D sprays. ←



WILD MORNING GLORY. One of the most difficult weeds to eliminate as it spreads from underground runners. May now be destroyed with 2,4-D. →



COMMON MALLOW. Common, indeed, in most new lawns. Hugs low to the ground and chokes out good grass. Easily dug, as it has just one long tap-root. ←



PROSTRATE PIGWEED. Common, especially in dry places. Seeds readily, but easily destroyed when young, by cultivation. →

MEXICAN FIREWEED. (Kochia). Almost as generally distributed as the Russian Thistle. Also easy to eliminate if gone after when it is small. ←

WILD LETTUCE. Another weed which is much better than spinach when young. We will have to teach a lot of people to eat it, however, before it becomes extinct as it is a liberal seeder. Easily destroyed by cultivation or mowing. →

RUSSIAN THISTLE. It evidently likes America. Widely distributed all over the West because of its "tumbling" habit when the seeds are ripe. Easily destroyed when young, by clean cultivation. ←

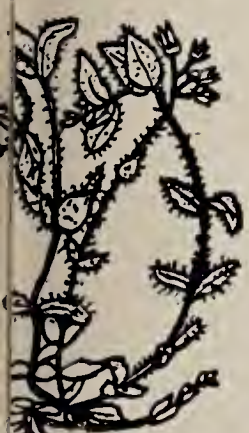
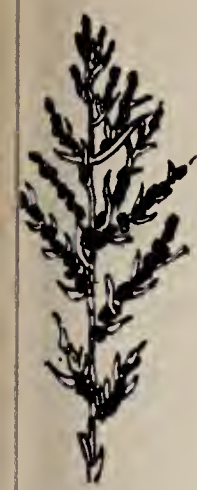
CRABGRASS. "Suddenly it's fall" when the first cold nights make the crabgrass in a lawn stand out prominently. An annual, but seeds freely, and these produce new plants in June. Several new chemical preparations have been developed in recent years which will kill both the crabgrass and the seed without seriously damaging bluegrass. →

MOUSE-EAR CHICKWEED. Rather pretty, little, notched, five-petalled, white flowers. Persistent in lawns, but can be controlled by frequent applications of the modern weed killers. Your canary will enjoy eating it if you do not. ←

CREeping BELLFLOWER. "The cancer of the garden." Spreads by underground roots which are very difficult to destroy. Not affected by one spraying of 2,4-D. Innocently spread from one garden to another by gifts from neighbors because of its beautiful blue flowers. About the only control is frequent cultivation or sifting ALL the roots out from the area it occupies. →

PEPPERGRASS. One of the many common weeds of the Mustard family. Seeds freely and spreads rapidly, but easily eliminated by cultivation or mowing, as it is an annual. ←

PURSLANE. Very persistent little plant because its leaves are so succulent that it can lay out all day in the sun without roots and still take root and grow if later covered up. Also forms seeds when very young. Another good salad plant. →



Some of the Most Popular Perennials and Annuals Classified As to Color and Height

OVER 36" HIGH

PERENNIALS

<i>White</i>	<i>Yellow and Orange</i>	<i>Red and Pink</i>	<i>Blue and Lavender</i>
Aster	Goldenrod	Aster	Aster
Canterbury Bell	Hollyhock	Canterbury Bell	Canterbury Bell
Delphinium		Delphinium	Delphinium
Hollyhock		Hollyhock	

ANNUALS

Cosmos	Cosmos	Cosmos	Sweet Pea
Nicotiana	Sunflower	Nicotiana	
Sweet Pea		Sweet Pea	

12" to 36" HIGH

PERENNIALS

Aster	Chrysanthemum	Aster	Anchusa
Babysbreath	Columbine	Bleeding Heart	Aster
Canterbury Bell	Coreopsis	Canterbury Bell	Blue Flax
Chrysanthemum	Gaillardia	Chrysanthemum	Campanula carp.
Funkia (Hosta)	Geum	Columbine	Canterbury Bell
Meadowrue	Russell Lupine	Dictamnus	Columbine
Oriental Poppy		Oriental Poppy	Funkia (Hosta)
Painted Daisy		Perennial Phlox	Phlox divaricata
Perennial Phlox		Pyrethrum	
Physostegia			
Russell Lupine			
Shasta Daisy			

ANNUALS

Aster (China)	Calendula	Aster (China)	Aster (China)
Cornflower	Marigold	Cornflower	Cornflower
Larkspur	Nasturtium	4 o'Clock	4 o'Clock
Nigella	Snapdragon	Larkspur	Larkspur
Phlox	Zinnia	Phlox	Nigella
Shirley Poppy		Salpiglossis	Salpiglossis
Snapdragon		Shirley Poppy	Zinnia
Zinnia		Snapdragon	
		Zinnia	

UNDER 12" HIGH

PERENNIALS

Iceland Poppy	Iceland Poppy	Iceland Poppy	Phlox divaricata
Lily-of-the-Valley	Poly. Primrose	Phlox subulata	Pinks
Phlox subulata	Trollius	Pinks	Sweet William
Pinks		Poly. Primrose	
Sweet William		Sweet William	

ANNUALS

Alyssum	Pansy	Begonia	Alyssum
Begonia		Geranium	Lobelia
Candytuft		Pansy	Calendula
Geranium		Petunia	Pansy
Pansy		Verbena	Verbena
Petunia			
Verbena			

DO YOU CARE?

By GEORGE W. KELLY

THE papers of April 3, 1953, reported that Colorado senators, Eugene D. Milliken and Ed C. Johnson, and eight other senators from western states, had presented a bill to the United States Senate, and Representative Wayne Aspinall of Palisade, Colorado, had introduced a similar bill in the House, for one and one-half billion dollars, for Upper Colorado River storage project of the U. S. Reclamation Bureau, which recommended among other projects that the proposed dam at Echo Park in the Dinosaur National Monument be authorized.

There may be an attempt to rush this authorization through or it may be subject to discussion and amendment for many months. It does not include, as yet, a request for an appropriation to carry out the proposed construction.

This is the first definite presentation of this project, which has been the subject of so much controversy for a couple of years.

Everyone should learn the facts in this case for the newspapers, in general, have not told them. The truth is that there is no need to build these dams in the Dinosaur Monument, for other available sites will give all the necessary storage of water and development of power. These canyons of the Green and Yampa Rivers, which are in the Monument, offer recreational values of much greater amount than any possible values for water storage or power development. As our population increases the need

will become greater for these examples of untamed and unspoiled Nature and we must look forward and preserve these primitive spots for future generations. Preserved, they will benefit the nation spiritually and financially indefinitely, while at the best, their value for water storage may be only a hundred years or so.

The senators and representatives who have sponsored this bill know these facts, but traditionally they are influenced by those who make the most noise, and those few private and governmental groups who hope to profit from the building of these dams, can make more noise than all the other millions of citizens who stand to lose their birthright.

Do YOU care enough what happens to put in your protest to your representatives in Congress and make your little bit of "noise" to help balance that made by those who would like to profit by the erection of the dams?

There are other proposed dams, though, which would not spoil irreparable scenery, which it would probably take twenty years to construct. Let us suggest that these other dams be built first. Within twenty years more people can see the majestic canyons, in Dinosaur Monument, that are proposed to be flooded, then they can decide whether they want them used for recreation or the storage of water. As it is, the people of the United States are due to lose a great asset without knowing what is happening.

Don't cut all the leaves from tulips after they bloom unless you do not care for flowers next year, for they require these leaves to develop energy in the bulbs to produce next year's flowers.

BEAUTIFUL PLANTS NOT OFTEN FOUND IN GARDENS

By ROSE TUGGLE

ON visiting the various gardens, one usually finds the same kind of plants in them; tulips to start the season of bloom followed by iris, peonies, then perennials and biennials. These are all beautiful flowers, and we cannot do without them, but there are a number of charming little flowers that are not often seen in today's gardens and which add much to the attractiveness of the flower borders. Each one is endowed with a charm and beauty all its own.

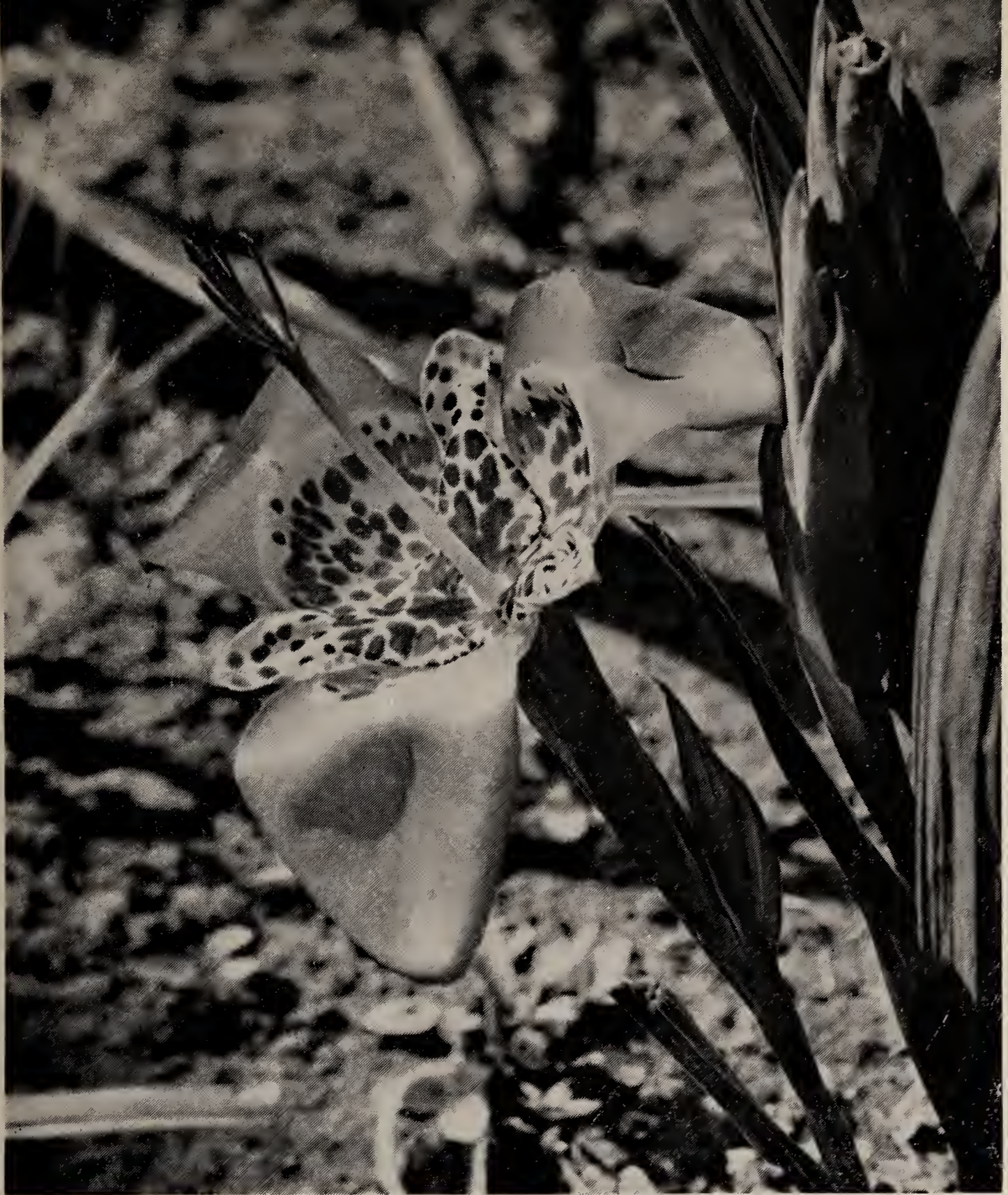
In early spring, we see phlox subulata or moss pink as it is sometimes called, but have you ever seen campanula Cullinmore used as an edging along a row of pink tulips? The flowers are various shades of blue and bloom from June until fall. *C. carpatica* or blue carpet is a newer type of this little plant. The flowers are deep blue, and it, too, blooms from June until October. *C. carpatica alba* is a lovely white. There are also several other varieties. They all make fine rock garden plants.

In the old-fashioned gardens of grandmother's day, there were great beds of spicy, perfumed dianthus; pinks, she called them. Of these, there is a large variety. They are perfectly hardy everywhere, and need no fussing over them. They love a dry, sunny location, in sandy soil. Among the various kinds is dianthus Heddwigi or Chinese pinks. The flowers are large and of the most brilliant colors ranging from white to crimson. Many are laced and striped. Truly, a beautiful flower and it blooms all summer long, keeping the gardener well supplied with cut flowers and perfume. Dianthus Caesius grandiflorus is the Cheddar pink, not

so fluffy as the Chinese, but sweet scented as a rose. It blooms from early spring till fall and is grand for cutting. Dianthus or garden pinks come in a variety of colors and their fragrance is sweet and spicy. Some of the newer ones, such as Evangeline, Beatrice and Dinah, almost look like carnations. By keeping the flowers cut and no seed allowed to form, they will always be in bloom. The newer pinks named above are sturdier plants with more bloom and better substance than those of grandmother's day.

Another charming plant is iberis or perennial candytuft. It will grow in ordinary garden soil and makes a charming edging plant along a walk, and is fine for the rock garden. In spring, the shrubby-like plants are covered with a mass of snow white flowers. The foliage is dark green and stays evergreen all winter. It is a very desirable plant in the garden. In early spring before the snow is gone, the purple noses of mertensia, (Virginia cowslip or bluebells) are coming through the ground. They like a partially shady spot that does not dry out and which is not disturbed. Planted together, daffodils, edged with alyssum saxatile or with the lovely blue or white muscari, make a picture of loveliness.

Another flower that loves a moist shady place is nierembergia or trailing cup-flower. It is of dwarf habit with spoon-shaped leaves and creamy bell-shaped flowers. It must have plenty of water in dry weather and some protection over the winter. It blooms from June until September. Very charming little flowers are the tradescantias. They are dwarf, growing only about twelve inches high, and



Tigridia or Mexican Shell Flower.

the colors are from pure white to violet, some having lovely color contrasts. They bloom all summer and all they require is to be left alone. Insects do not bother them and they are permanent when once established requiring no special care. The foliage is also very decorative.

The houseleek, sempervivum or hen-and-chickens, always attracts much attention. It needs no special care at all, will grow in poor soil, in partial shade, and some of them in the sun. The miniature houseleek is most interesting and so charming. It has a rosette of leaves and some are covered

with a net-work of coblike hairs which the plant produces for no known cause. The commonest species of them known botanically as *S. tectorum* is often called the roof houseleek from the fact that it grows on the roofs of many thatched cottages abroad. It likes to grow snuggled up among small rocks and needs very little or no moisture, during the winter, at which time the rosettes close up tight. The miniature varieties have red flowers which are charming in flower arrangements, and they are also lovely in dish gardens for winter decoration.

Another hardy perennial is helle-

borus niger, also called the Christmas rose, so called from its very late bloom. It is nearly stemless with thick but fibrous roots. This flower will grow in almost any garden soil but it prefers a moist and partially shaded location. The leaves are evergreen. It is somewhat difficult to transplant and it takes some time for it to become established, and when it is established, do not disturb the plant. It will bloom anywhere from October until early spring depending upon the location and weather. Sometimes, it blooms under the snow.

Among the hardy bulbs, we find some charming and interesting plants. One is *lycoris Halli*, the hardy *amaryllis*. It is perfectly hardy, and when planted in front of tall plants to give it background, it is indeed beautiful. It comes up in the spring producing attractive green foliage. This foliage grows until July when it ripens and disappears. About a month later, stalks suddenly appear to a

height of about two to three feet developing an umbel of large lily-shaped flowers, eight to ten in number of a delicate lilac-pink shade.

Tigridia, Mexican shellflower, is a bulb and should be treated like the *gladioli*, that is, it must be taken up in autumn and stored until spring. The flowers are gorgeously colored and very lovely. Plant it in a sunny spot in well drained soil. It blooms from July until September. The flowers resemble gaily colored shells and never grow very tall. When planting for permanence, the ground must be well prepared. What plants need is good drainage, and well-balanced organic food and not just a stimulant—the one containing the right amounts of those things that make plenty of strong roots, produce sturdy stalks, thrifty foliage and an abundance of good sized blooms. So, before planting, be sure that each plant has its required needs supplied.

LOOK AND LEARN GARDEN VISITS

By SUE KELLY

ANOTHER winter has gone and now right in the midst of spring, we are inviting you to the first of our "LOOK and LEARN" garden visits. George and I had a wonderful time visiting all of these gardens and selecting them for this year. We have tried to keep them all in one district so that you can take more time with each garden and won't have to chase from one side of the city to another. In some cases, it was difficult to decide where and when, so we hope you will come, "LOOK and LEARN" and have fun!

I'll try to describe the May group for you, and then each month we will have another group described. Our first group will be in the Park

Hill-Southeast section. The date is May 20, and we have tried to stay with Wednesdays all through this whole season (third Wednesdays!). We drove by (and later visited) the Jack Durrance and Dr. Hermann homes. Both of these beautiful gardens are *not* out of the average gardeners means if you have time to work in them. Beautiful material, interest, and seclusion if you want it can be found in them, and I'm not going to try to steal the expert's thunder in any of these gardens by telling you too much about any of them. The Raymond Sargent home and garden is grand, not too large and certainly lots of interest. The Englesby garden is one I've wanted to visit for many

years and finally with George leading the way, we stopped and saw it—shady, quite, a wealth of material, in a delightful setting. I'm very glad Mrs. Englesby consented to let us come in. So, too, with the Marriott garden! Not too large, certainly well within the range of most gardeners, and as they do the work themselves you can do so also, for such loving care soon reflects itself in the garden. The Schwan garden?—This see by all means! Here you will find myriads of unusual, tiny, beautiful plants, growing as happily as can be, and some new thing popping up around the corner. Wish I could go on, and on, but I'd better get on to listing the entire group, and then you make your own decisions. I'm sure you will all have "rave" notes to pass on to the owners and to your friends.

So much for that—now here are the gardens as listed for the entire year:

East—May 20, 1953

Wednesday, 9:30 A.M.-5:00 P.M.

Dr. and Mrs. J. R. Durrance,
4301 E. Cedar Avenue
Dr. and Mrs. A. A. Hermann,
131 S. Birch Street
Mr. and Mrs. Raymond Sargent,
2124 E. 4th Avenue
Mr. and Mrs. C. P. Englesby,
1658 Eudora Street
Mr. and Mrs. Herbert Schwan,
2390 Fairfax Street
Mr. and Mrs. A. J. Marriott,
3631 E. 34th Avenue

South—June 17, 1953

Wednesday, 9:30 A.M.-5:00 P.M.

Mr. and Mrs. J. V. Petersen,
3265 S. Bannock, Englewood
Mrs. N. C. Ball,
750 Lake Street, Littleton
Mr. and Mrs. W. F. Downs,
157 Ridge Road, Littleton
Mr. and Mrs. Paul Spencer,
4600 S. Lafayette, Englewood

Dr. and Mrs. C. S. Bluemel,
4501 S. Franklin, Englewood
Mr. and Mrs. Lemoine Bechtold,
4201 S. University, Englewood

West—July 15, 1953

Wednesday, 9:30 A.M.-5:00 P.M.

Mr. and Mrs. R. S. Dabner,
4589 Zuni Street, Denver
Mr. and Mrs. Randall Gould,
7645 W. 48th Avenue, Wheatridge
Mr. and Mrs. Harold Libby,
4260 Carr Street, Wheatridge
Mr. and Mrs. James B. Stewart,
400 Carr Street, Lakewood
Dr. and Mrs. B. Stewart Burkhardt,
95 S. Wadsworth, Lakewood
Mr. and Mrs. Louis Binderup,
3040 Raleigh, Denver

East and Southeast—Aug. 19, 1953

Wednesday, 9:30 A.M.-5:00 P.M.

Mr. and Mrs. Dabney Otis Collins,
5315 Montview Blvd.
Mr. and Mrs. Louis E. Fiske,
750 Pontiac Street
Dr. and Mrs. Arthur A. Wearner,
330 Albion Street
Mr. and Mrs. Robert S. Kohn,
One Eudora Street
Mr. and Mrs. D. L. Wheelock,
60 S. Cherry Street
Mr. and Mrs. Harry Hanks,
624 E. Vassar, Englewood
Mr. and Mrs. L. Brunhofer,
3601 S. Ogden, Englewood

If it had not been for the experimental work on rubber trees at the Kew Gardens, "not far from London", — Great Britain might have been deprived of an enormous income on rubber production.

Would you like to see what a Corktree looks like? It is the common name for *Phellodendron amurense*, and there is a specimen that is now 21 years old, directly south of East High School in Denver.

GARDEN ACCESSORIES

By MRS. CHARLES O. PARKER

ARTICLE after article has been written on the change in garden fashions, so that today we need only make a choice of the type of garden we prefer. It is impossible to avoid the endless papers written on background hedging and shrubbery which can be used to create any desired effect. The Perennial Border is a subject dear to all writers on garden subjects, and Annuals are discussed over and over again wherever gardeners meet.

There is really no sound excuse today, not to have just exactly the garden we have dreamed of, well-planned, neat and colorful during the entire season, and if we have read with care, it will even have color and attractive lines when the leaves have fallen. Somehow, we seldom seem to reach that goal. We hope we will, but there are bare spots in the border where we should have planted the annuals suggested. The weeds didn't cooperate, for they grew enthusiastically right beside that sickly perennial which we had bought because we were told it was an ideal plant for our type of garden. Whether it is because we over-nourished or under-nourished, over-watered or under-watered, we'll never know, but we had a wonderful time trying—an exhausting time. And next year we'll be at it again. This time we know that *other* perennial, which sounded good to us, will like our kind of soil.

But there are some things which belong to gardens which won't be a "maybe" proposition; which will give pleasure the year 'round and which will, I guarantee you, pay more dividends than the cost is to you. Your enjoyment of them will not depend upon the proper type of soil—whether you have just the right

amount of phosphorus, nitrogen or potash; nor will your pleasure depend on whether you water only the surface, water deep, water once a week, or every day. To be sure they do look much better in a well-cared-for garden.

I so often think of the time, a year ago, when I was on a tour of some of our loveliest local gardens. I had seen perfect blooms, perfect weeding, beautiful arrangements of backgrounds to show up the unusual foreground; there were lovely mowed lawns and well-kept house exteriors. The trellises had been newly painted and everything was perfection. I was green with envy and looked upon these ladies as surely having a supernatural gift—one I would perhaps never attain, for all my struggling. And then we went to the next home on the list. We went up the steps, and through the garden gate. I saw a background of flowers. Even now I couldn't tell you whether they were roses, petunias, lilies, or what—but my eyes were drawn and held by the most inviting spot—an awning-covered terrace on which was a table surrounded by comfortable chairs. It was a really cool and shady retreat from the hot sun of mid-day. How wonderful, indeed, for friends who dropped by, to sit in comfort and look at the general effect, rather than to march around the garden in the sun to look at specimen after specimen of perfection.

Now, I am not one to run down the perfect specimen. I doubt if I have ever really had one, but *this* was a garden built for the enjoyment and comfort of the gardener. Not a garden for gardening's sake, but a garden for living. It was a background for true living. There was room for the

perfect specimen, but if it was not there it did not really matter, for that garden was used by the owner as a gathering place for friends. And no one had to tell us, for it was obvious at the first glance.

No one would build a house and not put furniture in the living room. It would be uninviting. Every *Garden Magazine* we read speaks constantly of the garden as being an outdoor living room—so *furnish* it! All you need do is remember the rules of Interior Decorating. You know them! Keep things in scale; don't use too many colors; keep things in the same style; have balance, and don't overcrowd. Keep things simple and natural.

Whatever you choose, it should fit your personality, for with that you are happiest. And it is well to remember that unusual things must be skillfully handled to avoid making just a museum out of your garden.

I do not believe there is a garden which could not be made more inviting by putting, in some shady spot, a garden chair as an invitation to rest and appreciate the planting. Such

a chair, or bench, is an open invitation which tells you that this garden is not only a diversion and pleasant decoration, but it is a spacious outdoor room in which it is possible to rest and entertain. A moment's rest to the gardener uplifts him. For the friend, it is a place to rest and visit, and we know how many friendships are strengthened and even made in a garden. For the formal garden use benches but for the homey garden, the rustic type is more effective and proper.

In this era, when we are all becoming, more and more, sunworshippers, we know the pleasures of informal picnics, so we must place a table in the garden from which to serve the cool drinks and garden salads so appreciated during the summer months.

If you have the space, and it takes so little, a barbecue pit, or an outdoor fireplace can be fitted into the garden plan. Most husbands will enjoy the role of chef here, where they wouldn't undertake it in the white enamel and chrome kitchen indoors. We all know hamburgers and grilled steaks taste better outdoors. If there

Suitable Accessories help to make this charming garden of Mrs. John Kerr, Denver.



are children, the outdoor fireplace is a wonderful and easy place for them to do their entertaining for neighborhood friends. The fire is not only useful, but charming, and will add comfort to Colorado's cool summer nights and crisp days of autumn.

The logical place for the aforementioned chairs, table and fireplace is on a terrace. Today, more and more terraces are being used in the building of homes. Witness the living room paved in stone, with large glass slide doors opening out on the large terrace which is an extension of the living room floor. Some of this terrace will be shaded and some will be open to the sun. Of course, we can't all start with new homes, much as we might like to, but there is a spot on your property where a terrace will be both practical and inviting. A well-built terrace is easy to care for and attractive. Remember that the larger it is, the less lawn there is to mow! In one of the latest garden magazines a Patio Garden is shown, with a terrace on almost the entire plot of ground. Only around the edges is there soil for flower beds. Absolutely no lawn to mow! Sounds wonderful, doesn't it? And it was lovely, as pictured.

When you have built a fireplace at the edge of the terrace, and placed the chairs and table on it in a nice

conversational grouping, you will be pleased and wonder why you had not done it long ago.

Now for those who love birds, and I do, except at strawberry time, there is much satisfaction from a bird bath. It invites the feathered tribe and you will be rewarded by their appreciation. You will also be surprised at the number of unusual and different birds which will call upon you and with whom you can become acquainted. Then there are bird houses which invite the birds to make their homes in your garden. They are a constant source of pleasure from their nesting time until they leave for warmer climates. For those who stay all winter, you can furnish feeding stations for their sustenance and your entertainment.

Another type of accessory is the garden pool, large or small, for fish or waterlilies, or only for reflection. It can be with a fountain or without. It may be edged with rock and planted with the lovely low-growing plants so suitable for pools. In the average-sized plot of ground, the pool is most effective in the lowest part of the garden, as it is the most likely spot for it.

In order to have privacy and comfort, a garden wall, built of stone or brick, between you and the neighbors, or at the alley, can make your garden seem much more cozy.

Stone, cement or brick walks add to the charm of a garden when properly placed and made of material which blends with the house. Do remember the material of your house whenever adding anything. Also, please don't use wood, cement, flagstone, brick and metal, all in one yard. It makes for a hodgepodge effect.

Sculpture pieces, when properly chosen, can do a great deal to enhance the design of a garden, although I still hesitate to approve some of the





extreme modern, or some of the old, for that matter! An urn of suitable shape might add just the touch to lift your garden from the commonplace.

Gateways, our garden exits and entrances, are places where first impressions are formed. They can be both decorative and useful. Do give a little thought to the design, for the gate can be made to be both attractive and to add a point of interest to the garden.

Another interesting item for the garden is the sun dial. One usually thinks of it as a formal piece; but it need not be. It can be placed upon a rustic base as well as on a marble column. It has been used for centuries.

There is also the lantern and post which not only lights the walk but welcomes the guest and adds so much style to certain types of homes. And do not forget artificial lighting which is so very effective, especially when thrown on a white garden which can be seen from the terrace. The mirrored glass ball reflects the view and is a real joy, especially in a rose garden.

There are also such items as lattices for roses, grapes or other climbing vines. Choose their designs carefully, for each item becomes part of the whole, and the whole? Well, it becomes your Picture Garden.

If anyone wants to make a thorough study of all the Hawthorns, the best place for him to go is the Arnold Arboretum at Cambridge, Mass. It has a practically complete collection, planted in artistic arrangement.

It is usually good practice to delay *regular* watering of the lawn in the spring. However, when it gets really dry as indicated by its brown color, a thorough watering should be given whether it be December or March.

Effective wall fountain in garden of Mr. and Mrs. T. P. Campbell.



MULCHES IN THE PERENNIAL BORDER

By L. J. HOLLAND

ALTHOUGH mulches have been used by gardeners since time immemorial, it is within the last few years that there has been any concerted effort to determine the full effects of mulches in regards to soil conditioning, or to evaluate fully the various mulching materials. Due to experiments by several colleges (Ohio State in particular) information has been released that proves that the insulating value of mulches is only one of several desirable characteristics and a minor one at that. The writer does not claim to be an authority on this subject, but after considerable perusal of the findings of research technicians, and also some first hand observations of test plots on his own ground, believes that the information obtained is worthwhile passing on.

Webster defines a mulch as, "Any loose material, such as straw, placed about the stalk of a plant, to protect the roots." Very good, as far as it goes, but, as implied above, this is only the beginning. However, since a great many gardeners seems to take Webster literally, let us first look at the subject from just this angle. That all mulches do have an insulating value is well known to all, but few seem to realize that they have the same retarding effect on heat in the Summer that they do on cold in the Winter. Accurate observations have indicated that soil temperatures varied as much as 20° in a twenty-four hour period in an unmulched plot, while in adjacent plots under three inches of mulch the temperature variation was only from 5° to 10°, depending on the type of mulch used, and likewise, the soil in Summer was 10° to 15° cooler under mulched areas than in the unmulched check plot; a factor of great importance in this region of

bright sunshine and low humidity. Always remember that the lower the humidity, the greater the benefit derived from the mulch, in regards to heat control and moisture control. Listen to your radio almost any day and you will hear that the relative humidity is 25%, or even much less. This brings us to the second phase of mulching; moisture control.

The molecular structure of the soil is such that tiny ducts or interstices are arranged in a vertical manner, with the upper end open to the atmosphere. Moisture is constantly being brought from the subsoil to the surface by capillary attraction where it is absorbed by the dry air much as a blotter absorbs ink. Since in this region irrigation is of prime importance (especially in the Denver metropolitan area, where the rapid increase in population is likely at any time to sharply curtail the amount of water available for irrigation) it is well to do all we can to conserve the moisture we have. Here mulches play what is probably their most important part.

It is well known that many plants are quite hardy in regions much colder than here, but fail to survive our winters. This, the writer believes, is largely due to insufficient moisture at the roots. That mulches correct this condition is evidenced by the writer's test plots; the mulched areas at all times had ample moisture at the soil surface, but the check plot would invariably dry to a depth of two to three inches between irrigations, which consisted of sprinkling with a revolving sprinkler once a week. Another factor considered is that earthworms are a pretty good barometer as to soil condition; under mulches, these were found to

be active throughout the entire year in the upper four inches of the soil, while in the check plot they ranged much deeper during the hottest weather and were not observed at all after the soil became cold.

Peatmoss has the greatest water holding capacity of any materials tested, and were this the only function of a mulch, would be ideal. Exploded mica has great water holding capacity, but blows too readily to be of much value in the open border. Chopped straw is very good in this respect and exerts the best temperature control of any material tested. Chopped cornstalks were very good, but since they decompose slowly, are likely to be considered too unsightly for the flower garden, although not objectionable in the vegetable garden. Shavings and excelsior from non-resinous woods are highly satisfactory. Partially decomposed leaves are excellent, but fresh leaves are likely to mat and cause water to run off, rather than be absorbed; fine peat and fine sawdust form a crust which has the same effect.

Shredded bark was the most permanent mulch, and had excellent temperature and moisture control. Strawy barnyard manure was exceptionally good, but its lack of availability almost rules it out. Tests in Ohio indicate that a mulching material that most of us probably have not thought of, is really outstanding; namely ground corn cobs. Odd as it may seem, corn cobs have a high sugar content, 6.8%. This seems to have an aggregating effect on heavy soils, making them more friable and giving greater porosity, thus enabling the soil to absorb and hold more moisture. While we must admit that ground corn cobs are not a staple on the market, almost all farmers grow corn and a great many have hammer mills, so it shouldn't be too difficult

to obtain this material. At any odds, not more than 40% of the material should pass through a half-inch screen.

The reader will note that all the mulches above, except exploded mica and shredded bark, add great quantities of humus to the soil. This is important in selecting a mulch, for most of our soil is very deficient in this matter. All mulches supplied the soil with additional elements, including some of the trace elements. Nitrogen seemed to decrease temporarily, due to the activity of the micro-organisms in the soil, but as the decomposing became more rapid, this deficiency was rectified.

Lawn clippings were not mentioned as mulching material for two reasons; lawn clippings mat down so that they shed water and also in decomposing they generate so much heat that many plants would be seriously injured. Lawn clippings are excellent as a mulch in the only place they ever should be used; back on the lawn. Mow your grass often enough that you can let the clippings stay right on the lawn, as they decay they will add needed humus to the soil and you'll be agreeably surprised at how much less water your lawn requires to stay in tip top shape. Does away with a lot of hard work raking the lawn, too. If you do let your grass get so tall that it is essential that you rake the lawn, do not use the clippings as a mulch until they are thoroughly composted. But, above all, don't throw the clippings away, it is almost criminal to do so.

How shall I handle very small seeds which I have soaked to hasten germination? Lakewood.

After soaking seeds in water all night, drain them upon a cloth, but be sure the cloth dries before trying to remove seeds.

LET'S KEEP THAT DISTANCE

By SAM HUDDLESTON

IN HOW many hundreds, nay thousands, of older yards have we seen ragged or leggy shrub borders? And on how many miles of streets have we seen trees that were spindly and apparently unhealthy? Oftentimes this poor showing is blamed on lack of food or perhaps on poor pruning practice. Before you take a stab at one of these as the answer to the difficulty, take a look at the spacing between the trees or shrubs.

More often than not, the source of trouble lies in that all important distance. What then should the distance be? The conscientious gardener finds little to guide him on this as the available literature seems to have avoided the question, probably because it is a matter of discretion, dependent on individual wants. In arriving at a concrete decision the gardener would find it well to consult his conscience with at least three moot questions about as follows:

1. Have I the patience to wait perhaps 4 or 5 years for my border to look right or twice that time for my street trees to amount to something?
2. Do I want what looks to be a good border, in spite of future appearance, as fast as I can have it?
3. If I plant too thick now have I the necessary fortitude to go in there and grub out the excess when the plants begin to crowd each other?

A good rule of green thumb to follow for long term, permanent spacing of deciduous plants, is three-fourths of the ultimate height of the tree or shrub. Let your conscience be your guide below this.

As all good gardeners know, the roots of a plant spread about as far as the top. As a general rule it is

also true that trees and shrubs when in a sunny, solitary position will have about the same spread as height, the height increasing in relation to spread in direct relation to shade and competition from other plants. To space closer than that spread is to place roots in competition for food and water and tops in competition for light and air. Plants will tolerate crowding, to a degree, but beyond a reasonable amount, a weakening results that is an invitation to all the bugs, pests and plagues within a countryman's mile.

WHAT MAKES A ROSE (Part II)

By E. L. D. SEYMOUR

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What makes a rose? Why, the same two complex factors that determine the nature and fate of every living thing—heredity and environment. Heredity, involving genetics and genealogy is, of course, the field of the rose breeders, hybridists, and producers. Environment includes not only location, climate, and soil, but also the cultural operations—planting, feeding, pruning, watering, etc.—that are the responsibility of rose growers, who may be commercial, or professional, or even amateur gardeners, like you and I.

Come spring, remove winter mulch and, as growth starts, the mounds of soil; but *do it gradually*. Prune out any dead wood; give first (preventive) spraying or dusting; work plant food application into soil, and water well.

Keep soil loose (and weeds down) by cultivating, or with thick, loose mulch; when necessary, water deeply; dust or spray often, covering both leaf surfaces.

For fewer—but larger and finer—exhibition-type blooms, “disbud.” That is, pinch out small side buds so the large terminal bud will make maximum growth. This may stimulate growth of buds in lower leaf axils, which, also, should be rubbed off as soon as seen. A second ration of plant food applied (in accordance with the manufacturer’s directions) when the plants start coming into bloom, will be definitely beneficial.

Cut blooms at right stage (before buds open fully), and properly. Get a good, long stem for effect, but leave at least two leaves on the parent shoot. Use sharp knife or shears; cut, slantwise, just above a leaf on outer side of the cane. As shoot arises from bud in that leaf axil it will grow outward and help develop an open-headed bush.

BEST BOOK IN THE HORTICULTURAL LIBRARY ON HOUSE PLANTS

By HELEN FOWLER

The most complete book on indoor gardening is Montague Free’s *All About House Plants*. The reason for repeated calls, at this time, for books on house plants could be because of the full and fine stock of these plants on the market in Denver today.

Montague Free’s book will tell you what to grow and how to grow any plant you may select from the shops to bring home, and also how to propagate any adaptable to house culture—how to pot, how to repot, which are tricks in themselves.

There are chapters on succulents, cacti, vines, creepers, ferns, flowering plants and those producing only foliage.

Of special value is the alphabetical list of plants with cultural directions covering each one. There is also a definite-purpose list attached. If your

interest is terrariums or dishgardens—how to make them is here, too, treated in detail.

The author has had years of experience in growing plants in his own home with a life-long familiarity in professional work both in England and America.

If you grow or plan to grow house plants, you will find, in this book, the fullest information ever published on this fascinating kind of gardening.

TRIPS TO DREAM ABOUT

These are forerunners of summer, 1953, scheduled for your convenience in planning your vacation. Dates have not been set for these trips. Possibly they will have to wait for late summer, July and August, when snow has run off in camping places and on the sites of long climbs. Details and dates will be furnished in later editions of the Green Thumb. These are two and three day trips.

Bellair Lake, north of Rocky Mountain National Park in Roosevelt National Forest. See *Colorado Wonderland*, Christmas Edition, 1952.

Grizzly Peak from Loveland Pass for Alpine flowers and snow, also long slides down snow banks.

Pawnee Pass to Pawnee Lake (fishing here) from Brainard Lake. More ambitious hikers may reach Crater Lake and Lindberg Peak from here.

Slavonia, northwest of Steamboat Springs, scouting new territory up Gold Creek and trip to lonely, lovely, Gilpin Lake. See “Vacation” number of *Colorado Wonderland*, 1953.

September 5, 6, 7, 1953, a Labor Day trip to Grand Lake County. Possibly a pack in and overnight to Lake Nanita, vicinity of Andrews Peak. Trail follows north inlet, ten and a half miles from Grand Lake Village.

COLORADO CAN LEARN FROM SPAIN

By JOAN PARRY

LAST summer I spent some weeks in Spain. I wanted to see something of the origin of Spanish influence in America's Southwest. You'll remember in an article "Colorado Crossroads" I wrote of the English influence which resolved itself in the love of green in a garden, and its conflicting contrast with the Spanish patio-style.

We used to talk about it. You favored, I remember, a wider use of grey and green and native plant material; more paving instead of grass. Now I'd like to pick up where we left off, and tell you something of the way the garden-makers of Spain met that same challenge on their own green and grey crossroads.

I should have known, but I had to see, myself, to realize, how similar the Spanish landscape is, both in character and climate, to the American Southwest. Neither so extensive nor on so grand a scale yet over and over again the sight of mesa or a mountain range, and the sense of distance across wild and arid country were reminiscent, as were the place names when I crossed the Sierra Madrono Pass and went through the white-walled village of Santa Fe.

It's amusing that when we talk today about making the modern garden an outdoor living room we speak of it as though it were something new. But the patio, the inner courtyard with its central fountain and open to the sky, was the main feature of houses along the Mediterranean coast. And it is a curious twist of history that we owe the development of the patio garden to the Arabs' conquest of southern Spain.

The Greeks and Romans were the originators of the patio; the Arabs its perfectionists. For they came to

that richly cultivated Roman province with the memories of the now legendary beauty of Persian gardens in their minds, and with gold spoil in their hands they hired Persian gardeners and Byzantine builders to create their palaces and pleasure grounds which to this day remain as the peak examples of the classic Spanish garden, unique and individual and with no counterpart elsewhere in Europe.

The Moors used shrubs and trees in that arid, desert-like country for the repose and refreshment which green alone can give. In Colorado I believe the addition of green grass lawns was due to sentiment, to the early British immigrant's desire to have his garden remind him of home.

Now that I've seen the Spanish garden with its tiled and pebbled paths and courtyards I am sure you are right, both by reason of fitness to environment and ease of maintenance, to prefer a wider use of stone material at the expense of grass in Colorado gardens. I didn't quite see it as you did, when I listened then. I was still thinking with the mind's eye, seeing the Spanish garden through that narrow slit-view of hearsay, instead of with a wide-eyed sight of personal experience and impression. I do agree entirely now.

When I remember those superb grass lawns in Denver I can almost hear people say in shocked surprise "why?"—the more especially since I come from a lawn-making country. But the answer is quite simple. Green is the predominant color of Spanish gardens even though there is no grass, and blue—the blue of your Colorado sky—runs green fairly close.

"Color, and yet you talk of green?" people may say, and my own reaction to that word might first be red

and blue and yellow. There is red and its primary attendants in those gardens, for the Spanish love color. Geranium-red, scarlet salvia, vermilion pomegranate, and carmine in the rose. There is apricot and gold of citrus fruit; violet and dusky mauve in bougainvillea and fragrant heliotrope, pale blue plumbago and wisteria, and the pastels of petunia down to the frail whiteness of jasmine which sometimes covers whole walls, pervading a place with its sweetness. But green predominates; it is the binding thread through all these accents of other colors. It is the broad-stitched



Scenes around the home and garden of Mr. and Mrs. J. R. (Buck) Bershears, in La Junta, Colo.

I'd never see another blue so intense as the blue of your Colorado sky—except in Persia. Would he allow me to add the blue of southern Spain? The intensity of blue in that sky is reflected in the rectangular pools and ties in with the Moorish love of blue. The turquoise blue of tiles and palace stonework is perhaps the brightest color in those mosaics which so resemble an Oriental rug, and the show flower pot as opposed to the everyday brick-red one most commonly used in those gardens is this same Oriental blue, an intense, sharp-glazed azure blue.

And there is grey, too, found often

background and boundary planted for contrast, for shelter and shade and landscape beauty, blended with the same care as the various fragrances of leaves and flowers.

The aromatic green of trim box and myrtle hedge, the close, almost velvet smoothness of fresh-clipped yew; the spreading green of the great southern magnolia, the bright shining green of lemon and orange trees and the sharp pointed sentinel cypresses all proclaim the Spanish love of green. But there is no grass.

Mr. De Boer once said to me that





*In the garden of Dr. R. D. W. Clapp,
Colorado Springs.*

in the leaves of shrubs and grey-leaved plants such as the artemisias, santolina and lavenders; Spain, with her blue skies and native grey colored plants has much in common with Colorado.

Simplicity of design and the use and play of water are the other impressions I have of these gardens. For simplicity, this is instantly remarked by the choice of garden accessories. Stone benches, often set in the walls and so part of the architectural scheme, are as plain as the brick-red flowerpots planted usually with geraniums and set around the fountains

Garden of Havens-Batchelder, Denver.



or in straight rows alongside the pools. Handrails and stairways, terrace and retaining walls are all extremely simple both in material and design. Trees and shrubs for the most part are cut straight across and down geometrically to form symmetrical arches and walls.

Lastly the use and play of water. Deliberately I write those two somewhat contradictory words side by side. Water helps to keep the patio cool—and what is more refreshing than the sound of running water in the parching heat of a summer day. And without this constant irrigation there could be no crops nor gardens in southern Spain.

To the people of Colorado and Spain alike water is as precious a commodity as green. It is music to their ears. I remember the narrow open channels along the sidewalks in Colorado Springs which keep the trees that line those streets alive and healthy. And, of course, I remember the sight and sound of the lawn sprinklers in Denver that work all day ceaselessly to keep your lawns and trees so green. Yet it seems, as the garden fountains of Spain, they play as they work, and indeed in old Moorish gardens the fountains are just as simple as the plain jets of Denver water sprayers, sprays of water rising from single lotus bud jets.

The most beautiful gardens to me were those set on the steep hillsides, alive with the sound of water which, stored in cisterns or pools at the highest point of ground, is distributed to the furthestmost and lowest points of the gardens alike. And in Granada, which depends (as Denver) on its supply of water from the snows of the encircling mountains, you may see one of the world's most beautiful.

The garden of the Generalife dates from the first quarter of the fourteenth century. You see it now probably very little changed, and its water system is almost as when first constructed. It is a garden literally alive

with the sound of water as it comes from the reservoirs on high ground, flowing down the open rail of balustrades, spilling from step to step from terrace fountains, coursing along the open channels of the patio to the pools that mirror the blue sky above. Thin sprays of water rise from a double avenue of tiny jets alongside the narrow canal that runs the whole length of the central patio: elsewhere the falling water is received by the wide shallow basins set flush with

the ground and in the plain fluted form of an open lotus flower.

Hilaire Belloc once wrote of fountains which he loved. He declared that "if you can afford to have a garden at all you can surely afford to have a fountain which shall baptize it continually and give it perennial grace." And I, having seen those Spanish gardens would, if I lived in a dry, arid climate, want to give my garden the sound and the life of a fountain, too.

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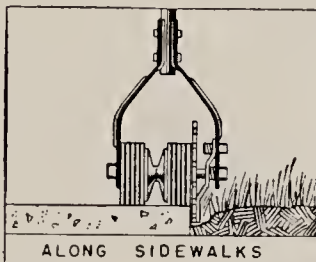
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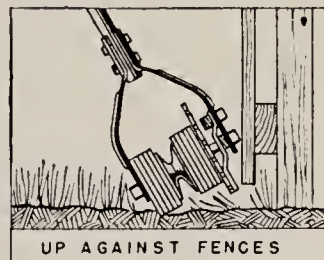
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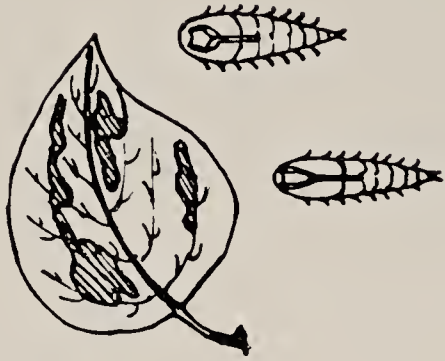
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TEN COMMON INSECT PESTS

Information compiled by George W. Kelly, Drawings by Lorene Smith



Thrips

Thrips are tiny black insects which most seriously damage gladiolus, onions, privet and a few other plants. They are seldom seen as they move very fast and hide much of the time

in the spaces between leaves. Evidence of their damage is faded areas on leaves and faded or distorted blooms. They are difficult to control when they become numerous. Prevention is usually more effective. Gladiolus bulbs should be treated with DDT when taken out of storage, and they should be planted in ground where no glads or onions have previously been grown.

DDT is used as a control on gladiolus and Lindane is used on roses.



Lilac Leaf Miner

The larvae of these insects develop as a small white worm between the upper and the lower surface of the leaves. When numerous enough they may almost defoliate the plants. They may be controlled with applications of DDT, Chlordane or Lindane. They should be treated when they first appear.



Leafhoppers

Leafhoppers are most destructive to rose, grape or ivy plants but may attack many others. They cause a fading and lifeless appearance to leaves when they are numerous. The young are soft-bodied and may be controlled much like aphids, but the adult are winged insects and may be controlled with a coverage of some such stomach poison as arsenate of lead. Repeated applications of either insecticide is necessary to control those that hatch later.



Aphids

The aphids or plant lice are soft-bodied insects which live by inserting their sharp beaks into a plant and sucking its sap. They multiply very rapidly when conditions are favorable. They may attack almost any growing plant at certain times. The activities of ants often indicate the presence of aphids, as ants enjoy the sweet "honey-dew" given off by aphids. As they do not chew and as they are soft-bodied, the control for them is a contact spray or dust. This may be nicotine sulphate (Blackleaf 40), Pyrethrum, Rotenone or some of the new insecticides such as TEPP or Lindane. Addition of soap will usually increase the effectiveness of sprays. It is important to repeat the treatment in a week or ten days to catch those which may have hatched from eggs after the first spray.



Grasshoppers

Grasshoppers may feed when hungry on almost any plant, but when there is plenty of food they may develop definite preferences; for instance, they may almost destroy iris without seriously damaging other plants. They are more abundant in some years than others and seem to prefer dry, hot weather. Insecticides containing chlordane have recently been found to be very effective in their control. Aldrin, Dieldrin and Toxaphene are also effective.

Sowbugs or Pillbugs

These little gray bugs are common in damp dark places, under boards, pots or refuse. They feed on roots or tender shoots of plants and may do considerable damage if allowed to become numerous. Removing their hiding places, keeping the surface of the ground drier and setting out poison bait are the usual controls. A common formula for Sowbug bait is 1 part Paris green, 9 parts sugar (or part flour or corn meal). This must be applied under boards or in places where animals and birds cannot reach it.



Leaf Slugs

These small shell-less snails are most destructive to the leaves of Cherry, Pear, Plum, Hawthorn, Cotoneaster, Roses and similar plants. The adult lays tiny eggs on leaves, which develop rapidly and may do a great deal of damage. They eat the green from between the veins of leaves, sometimes almost defoliating the trees.

The control is easy but the treatment must be done promptly when the slugs first appear. As they are soft bodied they may be killed with a contact spray, as they also chew they may be controlled with application of a stomach poison and as they are slimy creatures they may be destroyed by throwing ashes or dust on them.



Cutworms

The damage from cutworms is largely to small plants, as the worms cut off their roots or seriously damage them. They work at night and are usually seen as tightly rolled worms in the soil during the daytime. One control is by putting paper collars around such susceptible plants as asters and cabbage, or by putting out poisoned bait. A commonly used bait is made by mixing 1 ounce of Paris green, zinc arsenite or sodium fluosilicate, $1\frac{1}{4}$ pounds of bran, 4 ounces molasses and $\frac{1}{2}$ pint of water. Scatter at sundown. Chlordane and DDT are now used effectively.

Snout Beetles or Rose Curculio

These are beetles with a snout much like an elephant's trunk with which they bore holes in rose buds and do other damage. They are very destructive, but are hard to find as they work mostly early or late. No completely effective control has been developed but spraying periodically with the all purpose sprays or dusts may help to keep them under control. As they insert their snout into the plant to feed they are seldom affected by stomach poisons applied to the surface, and as they are not soft-bodied they are not affected by contact sprays. Hand picking in the early morning and a careful sanitation program have been found to be most effective.



Red Spiders or Spidermites

These pests are very small, so are seldom seen unless special effort is made to locate them. Tapping a suspected twig over a white piece of paper may disclose tiny red dots moving around which are the red spiders. Their time of greatest activity is during the hot days of late summer, but a few specimens may be found on infested plants almost any time of year. They multiply rapidly and live by sucking the sap from their host plant.

They may attack a great variety of plants but are most conspicuous for their damage to Colorado Juniper, Blue Spruce, Currants, Bush Cinquefoil, Perennial Phlox and other plants. Plants infested with them show a browning and dirty look on the under side of the leaves, or, in the case of evergreens, a gradual dying of needles from the inside of the plant toward the outside. Sulphur in some form has long been used in the control of red spiders and is still effective. It is most efficient when applied between 75 and 90 degrees temperature. Many new insecticides, or rather miticides, have been recently introduced which are more effective. These include Aramite, Dimite, Ovotran and Sodium Selenate. Each has its particular use. A hard force of cold water applied frequently will help to keep them under control, but cannot be expected to completely eliminate them.

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While Resting on the Bridge at the Foot of Brother's Water

By WILLIAM WORDSWORTH

The cock is crowing,
The stream is flowing,
The small birds twitter,
The lake doth glitter,
The green field sleeps in the sun;

The oldest and youngest
Are at work with the strongest;
The cattle are grazing,
Their heads never raising;
There are forty feeding like one!

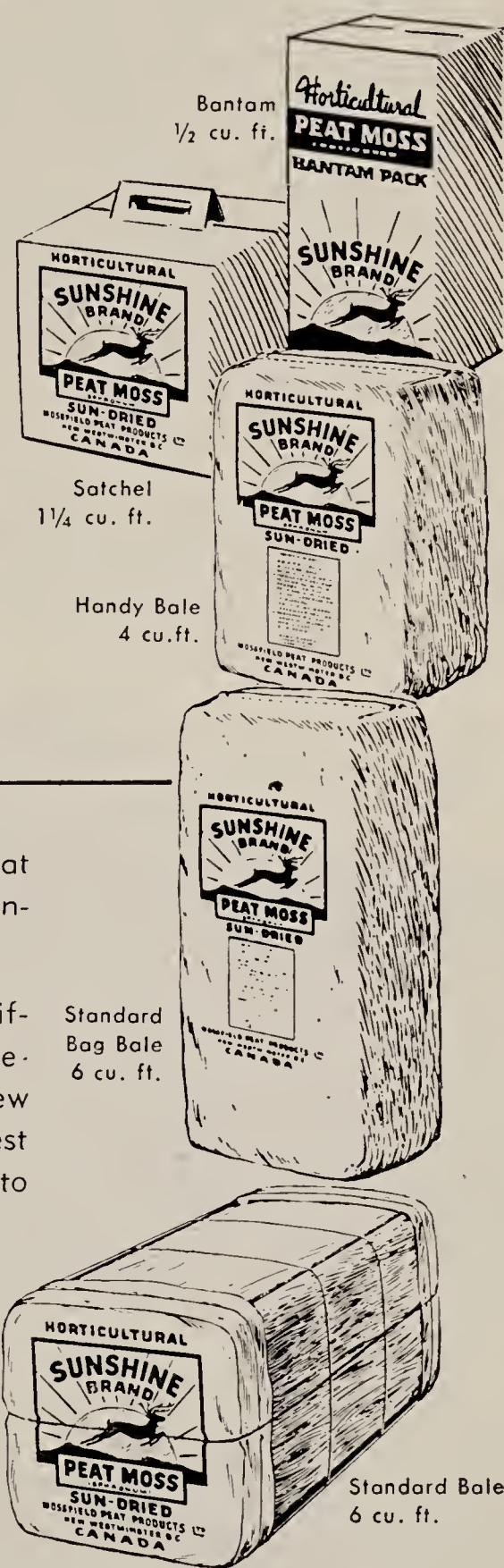
Like an army defeated
The snow hath retreated,
And now doth fare ill
On the top of the bare hill;
The plough-boy is whooping—anon
—anon:

There's joy in the mountains;
There's life in the fountains;
Small clouds are sailing,
Blue sky prevailing;
The rain is over and gone!

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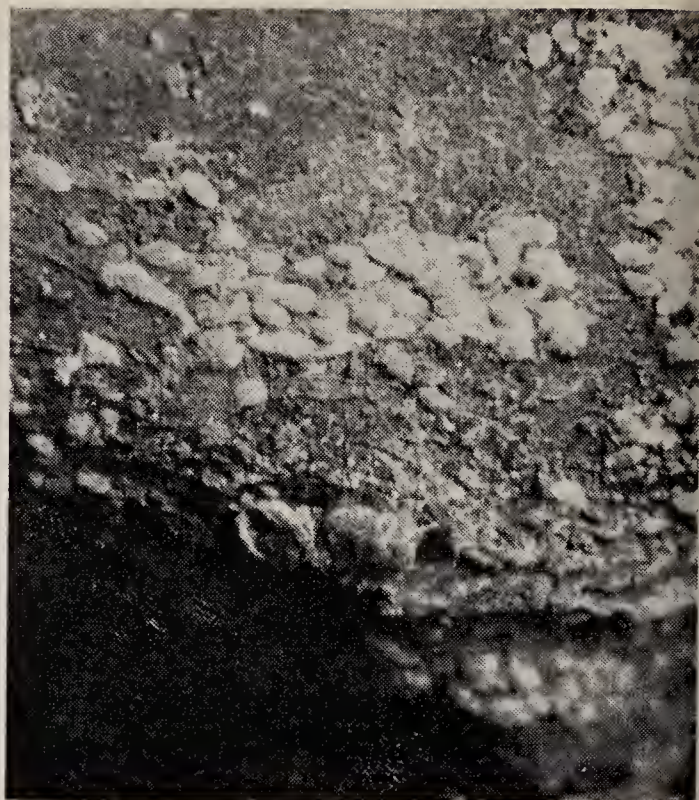
EUROPEAN ELM SCALE CONTROL

By EARL SINNAMON

European Elm Scale attacks all species of elms, but is most destructive to the American Elm. Briefly the life history is as follows: the young begin to hatch about June 15th, depending on the season, and crawl to the undersides of the leaves where they spend the summer sucking the elaborated plant foods and thus weakening the trees. Before leaf fall they start to move back again to the twigs and branches, settling for the winter on the bark and in bark crevices and remain immobile until spring.

The presence of the scale is most noticeable during the summer months when excretions from the insects shower down a mist of "honey dew" covering everything beneath the tree.

Pfitzer Junipers may be trimmed when necessary without destroying their natural shape and beauty. Photos by Harry Steele.



But effective control is difficult at this time of year because of the dense foliage and the habit of the insects to remain close to the mid vein of the leaf, where they are well protected.

However a thorough application of 6% dormant oil spray during the late fall or early spring does give effective control for one or two years. Recent tests using DDT applied during the crawler stage in early summer have also given good control.

What should I do with my seed bed before planting seed? Denver.

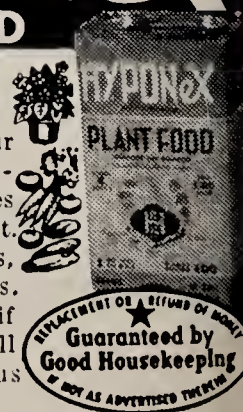
About twenty-four hours before planting seeds thoroughly soak the bed until the water penetrates a foot deep. Allow the bed to stay without cover until the topsoil is friable and not lumpy and then sow the seed in rows four or five inches apart.



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LADY EVE BALFOUR, SOIL CONSERVATIONIST

Lady Eve Balfour who recently visited Denver as part of a lecture tour in the U. S. is one of the leading conservationists of England. The niece of the late Prime Minister Lord A. J. Balfour, Lady Eve's interest in horticulture developed early and she took her agricultural diploma in 1917. In the middle 20's she bought an old Suffolk farm, "New Bells," in Haughly with its farm house built of timber from the ships of the first Elizabeth. There she became a real practicing farmer, developed a herd of dairy cattle and raised vegetables for the market.

It was about 1938 that Lady Eve began studying the relationship between sound health and food grown from healthy soil. The importance of this new approach to soil and nutrition was furthered through her friendship with such authorities as Dr. J. T. Wrench ("Wheels of Health"); Lord Portsmouth ("Famine in England"); and the late Sir Albert Howard ("Agricultural Testament").

As her understanding grew, Lady Eve increasingly felt the need for a controlled ecological experiment to test the theories put forward by the above authorities, and was fortunate to find one of her friends to provide the means to set up the Haughly Research Trust. The preliminary plans were barely begun when the war broke out. Despite a very uphill struggle, much preparatory work was achieved including the division of the land into three sections. On one section seed to be grown on soil chemically treated, on another, seed to be grown in all-organic soil, and on the third in no-compost soil. Seeds from

these crops are now reaching into the fifth and sixth generation.

Lady Eve is the author of the "Living Soil," an extremely readable book where scattered evidence and information on organic gardening is made available for the lay reader. As a result of the growing interest in this subject from a health as well as a conservation point of view, the "Soil Association" was formed in 1946 and now counts its members in 42 countries—among them doctors, dentists, veterinarians, research workers, farmers, growers, gardeners, housewives, and teachers. Their monthly publication, "Mother Earth" is extremely timely.

No one who met Lady Eve during her very brief visit to Denver could help but be imbued with her enthusiasm and her sound approach to the very vital and fundamental subject that concerns us all—namely the fertility of the soil. The work of the Soil Association as described by Lady Eve is one of pioneering, but pioneering by scientific thoughtful methods that should make available valuable and tested results to all of us.

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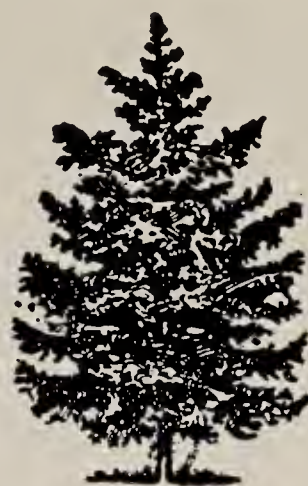
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Photo by Chuck Ott from Alaska.

CHUCK OTT WRITES FROM ALASKA

WE ARE having a premature spring here . . . it is warm and the snow is going fast. I do not like to see that . . . it is too early. Last Sunday me and my cameras (I have added another . . . a 16 mm. movie outfit) took off along the railroad track out of Wasilla (in the great Matanuska Valley near here). The day started off cloudy with rain and snow but cleared up in the afternoon . . . turned into a beautiful day. The streams had broken through their ice barriers and were gurgling happily. A little ouzel allowed me to photograph him on the ice at the stream's edge and then went busily on his way. Although I knew it was too early I kept straining to hear spring music of the returning wildfowl . . . the soul-stirring "hawank" of the geese, the "garoo-o" of the crane, or the gabble of the ducks.

When I came to the Big Lake trail, I hiked in several miles along it. The snow was wet and hard to walk on

at times . . . having neglected to wear rubber footwear my feet soon were a saturated solution. Quite a few moose were wintering in the willow flats here . . . they browse on the willow, birch and aspen twigs. Could not get any good photographs of them as the brush was too thick. Most of the cows still had their calves of last spring at their side. Most people look upon the moose as being an ugly, ungainly creature. To me they are graceful and majestic . . . to see them running across the "niggerhead" country, the spongy muskeg or up the steep slopes, always brings forth my admiration. I have never been able to understand the strange twist or quirk in the minds of some men or women . . . the so-called "sportsmen" or hunters, that makes them want to kill moose, bear, deer, elk, etc. . . . because the powers that be say a certain period shall be "open" for the slaughter of wildlife? Or because Tom Jones next door is going? The

trash that fills the pages of the so-called sporting or outdoor magazines etc.? I can see the Indian, Eskimo, the poor homesteader, or the wilderness trapper or wanderer killing for food, clothing and so on. But I have nothing but contempt for the sportsman who thinks he needs the "excuse" of hunting, or killing, to enjoy the outdoors. But enough of that . . .



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A FEW NOTES ON SOME ROSES OF OTHER DAYS

By HELEN FOWLER

THE great beauty, variety and versatility of the modern rose seems to have cast most of the other kinds into the shade. In the olden days no one ever thought of giving these friendly old Roses a place to themselves for they were planted right along with the old purple Phlox, the old-fashioned Chrysanthemums and the Tiger Lilies. Being flowers of one season they were planted in the borders among the shrubs and perennial plants, each having its own day of dominion.

As a background for Poppies, Iris, Sweet William, Peonies and Canterbury Bells they might lend to any garden a certain charm and sweetness; they could have a very distinct place by making a four-sided outline with grass walks between for a rose plot, formal in style, using a great moss rock or a small fountain for its center. Does it not seem strange, that the Rose, greatly loved for so many centuries, should not have attracted the attention of the hybridists earlier? Perhaps they thought it good enough and beyond improvement.

According to rose history, the Damask Rose (*Rosa damascena*) was most important, as crossed with *Rosa gallica*, it had much to do in the making of the race of Hybrid Perpetuals. In times way back it was put to many uses—as cosmetics, as medicine and as confections. This Damask was the Rose used in the manufacture of Attar of Roses and in the making of Rose Water. I am not sure but that it is used today for those same purposes.

There is another popular old rose, *Rosa mundi*, which got its name from the fair Rosamund of the great days of Henry II.

The old Cabbage Rose could not be omitted here, nor the Moss Rose with all its addiction to mildew. For those who like this latter, to grow it best, it should be given rich soil and a spring and summer dusting of powdered sulphur.

But those most commonly used today are those with the yellow flowers—the Persian yellow with its lavish display of semi-double flowers in June. Effective when in bloom, with

its attractive foliage, few shrubs can surpass it. Less hardy and less vigorous, is the Harison Rose and much more difficult to manage. Father Hugo's Rose (*Rosa hugonis*) is that one which nearly always disappoints. But note this—if care is taken not to give it a rich soil, in fact to place it in a position where the soil is poorer than the average poor soil, this lovely rose will bloom profusely and present what it really is—one of the best single yellow roses in cultivation.

The old white *R. spinosissima* is sometimes seen growing here. It has a very open growth, sometimes even straggly. Planting three or four together might do for it what the same style of planting does for the Michaelmas Daisy.

The Austrian brier, *Rosa foetida*, bicolor, the Austrian copper brier has flowers of orange-copper, which might

provide an attractive accent when planted with the other yellow Roses.

A great favorite of mine among shrub roses is *Rosa rubrifolia*—it may be a favorite because it is lovely planted up against the brown house here—the rose, with its purplish branches covered with glaucous bloom and its touches here and there of rose-pink bloom. I write this article, today, thinking it might be interesting for some rose lovers to go back to the front of the old book and enjoy again the Memorial, the Swamp, the Pasture, and some others which might be grown here and which lent such charm to the gardens of yesterday.

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MAY GARDEN REMINDERS

THE transplanting of trees, shrubs, evergreens and roses should be completed in this month, unless potted or balled plants are available. Many perennials can be moved for a while longer if some soil is taken with them and they are handled carefully. Some of the hardier annuals may be planted out or seeded, but most of the tender annuals had better wait until June. Early this month may still be time to start a few things in flats or pots indoors so that they may have a head start over those planted directly in the soil later.

Some pests will begin to appear now. Look especially for aphids on Spirea, Juniper, and Spruce. Spray with a contact spray such as Black Leaf 40, Pyrethrum or Rotenone. If webworms appear spray them with DDT before they have a chance to defoliate your trees. Watch for the galls on Juniper trees. If only a few they may be picked off, if many they should be sprayed with a special Bordeaux spray to prevent their spread. Since roses are almost always attacked by a variety of pests it might be well to give a preventive spray (or dust) of an all-purpose spray about every 10 days. Most perennial phlox should have a dusting with sulphur every ten days to prevent damage from red spider and rust.

Now is the time to start the practice of labelling things in the garden. Few can remember names or dates that are needed later. Also start that garden notebook, so that you will be reminded next fall or spring of the necessary bulbs or plants to complete your garden.

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PE 3791

May is the most important month to train a good lawn. If watering is only done when needed and then a deep soaking is made it will tend to make the grass send roots down instead of staying near the surface. Reseed bare spots and keep the surface of the ground covered with a mulch of peat, manure or grass clippings. Set the mower to cut at least 1½ inches high and leave all of the clippings possible. If the lawn does not seem to grow vigorously give it a light application of fertilizer.

Ordinarily there is no very urgent need to water in May, though in the case of extended drouth many plants may become dried out. Do not start a regular routine of frequent waterings now, but water only when the ground is dry around the roots. If watered when not needed at this time of year it will tend to keep the roots on the surface where they are sure to suffer in the hot days of summer. Make a regular practice of digging into the soil occasionally to see how wet or dry it is. Mulching the borders as well as the lawn with manure, peat, leaf mold or grass clippings will help to keep moisture in the soil and save water. Many weeds will be eliminated by proper mulching and those few that do come through are usually easy to pull. Cultivate only when mulching is not possible and even then cultivate only deep enough to destroy the weed seedlings.

If there are broken or dead limbs in the trees they may be taken out at any time. Be sure that you know how to make proper cuts so that the wounds will heal. If you do not know it is better to hire someone who does know. A general rule is to do what pruning is necessary on shrubs right after they bloom. This will give a full year for the next season's flower buds to develop. Pruning of shrubs most often consists of taking out a few old stems clear down to the ground, rather than shearing them from the top or trimming off all the lower twigs.

It seems that there are still a few gardeners who do not understand that the only way a tulip or other bulb can gain strength for next season's bloom is to leave the leaves on them until they naturally dry up.

Above all, in May, learn to enjoy your garden. Now the weather is neither too hot or too cold, the pests are not yet bad, not much watering is needed and everything looks fresh and vigorous.

Picture on back cover of the Generaliffe gardens in Spain, Photo by Joan Parry.

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The Green Thumb

Vol. 10

JUNE, 1953

No. 6

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Picture on front cover of the new Mojave Rose by Armstrong.

Most of the material for this Arapahoe County issue has been assembled by Mrs. Lynnette Emery and Mrs. Bernice Peterson. We think that they have done a fine job and appreciate it very much.

GEORGE W. KELLY.....	Editor	MRS. HELEN FOWLER.....	Librarian
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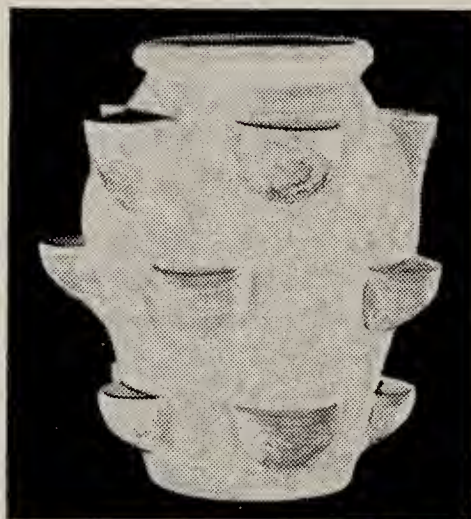
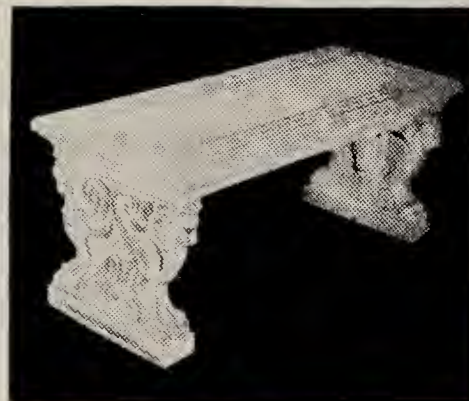
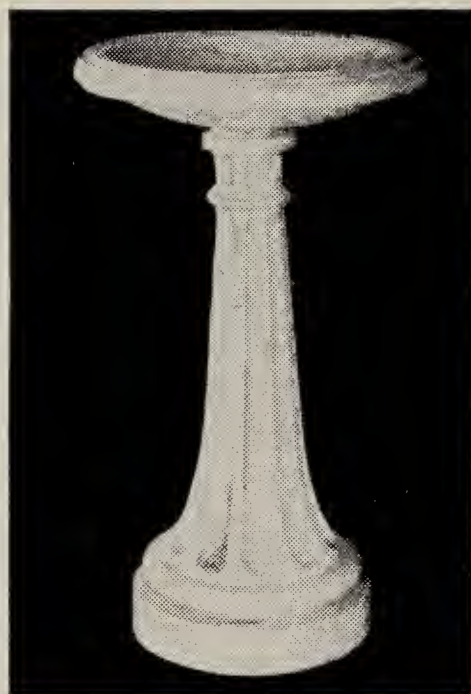
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JUNE SCHEDULE

June 7, Sunday. Trip to Hassel Lake via Urad Mine Gulch. Return over saddle above Hassel Lake and out through Butler Gulch.

June 11, Thursday, 8 P.M., at Municipal Bldg., Room 186. Regular meeting of Denver Rose Society. Rose lovers welcome.

June 14, Sunday. Rose show of Denver Rose Society. Call for details.

June 14, Sunday. Trip up Platte Canyon over old railroad tracks, entering above Pine Grove and leaving at Estabrook. Walking distance about 8 miles.

June 17, Wednesday. Garden Tour of the Look and Learn Series. List of gardens to be visited on tickets, available at Horticulture House.

June 21, Sunday. Trip Wild Basin to Thunder Lake to look for Calypso Orchids and other flowers. Also to Ousel and Chickadee Lakes for waterlilies. May be an overnite if requested. Leaders Lee and Howard Housely.

June 28, Sunday. Trip to inspect the Glenmore Arboretum of Robert More at Buffalo. All kinds of evergreens and native plants. After lunch visit to Albert and Alpha Bancroft. Yellow Lady's Slippers may be in bloom. Leaders Charlotte Barbour and Robert More.

July 3, 4, 5, Friday, Saturday, Sun-

day. Leave Denver Friday after work. Camp at the west side of Berthoud Pass. Saturday drive to Grand Lake. Climb Bowen Mountain.

All day trips leave Horticulture House at 8:30 A.M. Please register several days in advance so transportation can be arranged. Call TA 3410 or PE 5565 for details.

CONSERVATION NEWS

At the last directors' meeting of your association there was a resolution passed and copies sent to The State Land Board and City of Denver officials protesting the sale of part of City Park Golf Course. It was thought that Denver already has too few parks for the population and that every effort should be made to have the Land Board and City of Denver get together with an agreement which might preserve this area for much needed recreational purposes.

Concern was also expressed over reported plans for an "improved" highway up Bear Creek near Kitt-ridge, which would destroy much of the natural beauty of this canyon and encroach on many of the existing picnic spots.

We must continually be on the alert for "improvements" which may destroy valuable assets of now and the future for the benefit of a few.

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OVER THE YEARS

By ANNA REYNOLDS MOORE, Aged 8 Years
Thoughts After a Visit to Monument Valley

Over the years I've been growing and growing.
Over the years the wind has been blowing.
Over the years the rocks have been forming.
Over the years we've been waiting for morning.
Over the years the dead have been sleeping.
Over the years the birds have been peeping.
Over the years and long ago,
We see the things forming as the winds blow.
Mother and I sit down to tea
And I ask mother and mother asks me;—
"What was the world like before I was born?
What were the rocks like before I was born?
What was the berry like and what was the thorn?"
Over the years it's all come to be.
Now in a picture I begin to see
How the world was supposed to be,
How the people grow and grow,
How the winds began to blow.
The question I ask myself over again and over again;—
"How did this world ever begin,
From the years that have gone so far away
To the year that stops on this very day?
Over the years let this good world be.

BEGINNER'S LUCK

By MRS. DOUW FONDA

WE WERE complete greenhorns at this gardening game when we bought three suburban acres a year and a half ago. Yet, we still are as enthusiastic and starry eyed over the prospects of trying to acquire green thumbs as we were when we moved in. Since then, we have become very respectful of the phrase "you only learn by doing"—for, we have found, many times to our sorrow, that the words of wisdom of veteran gardeners too often fall on deaf ears when

learned not to rip out or plant anything too hastily, for it was quite a shock to have asparagus pop up in the strawberry patch and to have four o'clocks take over my spring patio garden.

We did, miraculously enough, start out our venture on the right foot by drawing up on paper a plan for our landscaping. We mapped out the areas we thought we would use for family enjoyment, children's play yard, utility space, compost pile, the vegetable and flower gardens, and the spots we wanted screened off from the road. Then we faced the ever present problem of financing our overly extensive plans. To our rescue came many wonderful people. At gift giving times, other garden lovers gave us gifts of bulbs, a tree, or tools—truly inspired gifts. As we moved in the fall, I was able to beg with out-stretched hands for plants that friends were thinning out. Aside from their materialistic worth, these plants carried with them a sentimental value, a token of friendship that would give a personal touch to our garden year after year, as well as serve as an introduction to many hitherto unknown species of flowers. Then, in December, we were introduced to a new source of nursery stock. We put in our application to the U. S. Department of Agriculture at Fort Collins for several varieties of native trees, costing only a few cents apiece—to be delivered at planting time.

Ah, spring! It came, and with it came planting time. With vim and vigor, we prepared our new gardens for planting. During the process I came across several plants appearing to be buttercups. I was very reverent of anything growing, especially grow-



they are offered to an enthusiastic novice. Experience has certainly been our teacher, though, at times, we have been dreadfully stupid students.

By buying an established house we had a head start on most new home owners in that we had a few trees, shrubs, flowers and part of the lawn already planted—although there was considerable remodeling and transplanting we wanted to do in the yard. As our landscaping plans had to fit into our budget, we wanted to utilize all of the existing material. I soon

ing without encouragement. So I carefully transplanted the first dozen I found, picturing, as I did so, interesting splashes of yellow here and there. Now as I tug and pull and curse those "buttercups", with their foot long roots, from every corner of our grounds, I have to laugh in spite of my annoyance at how any fool would try to grow *common* mallow!

To seed our lawn, the area which was formerly a cinder driveway and a field of WEEDS, was our first project. The preparation for this was back breaking, but finally the day dawned we had set aside for sowing. We had seeded one-third of the yard (in twice the estimated time), when the sacks of peat and sheep mixture we were using as a covering ran out. Only sacks of straight peat were available, and soon that gave out. By the time we bent over the last section (at dusk), the gentle spring zephyr had breezed into a wind and we had only a thin scattering of dirt left to put on top of what was left of the seed. When the grass came up, it looked like a perfect experimental section — each strip was progressively worse than the previous one; and, in the last section, it was hard to tell whether we were growing grass or weeds.

On a hot, arid day soon afterwards, we were frantically spraying the weeds around our baby grass when Mr. George Kelly dropped by. He advised us that the new blades would profit more, at that time, from the sheltering shade of the weeds, than our removing them. This was a completely new idea to us—a delightful one—that saved our precious grass and postponed our back-aches to another day.

With these projects behind us, we were now all steamed up, itching to plant things like mad. Our ideas

multiplied like rabbits. Our list of flowers and vegetables increased. We threw all caution to the wind as we spied a crocus bloom here and a bud leaf there. We tucked away out of heeding the words of wisdom given us by more experienced gardeners, warning us not to attempt too much at first; but rather, to centralize and simplify our planting. Spring had come and the gardening stores and publications had us ready to meet it head on. My husband was trapped by a seed store and came home one day with a future truck garden in his hands. Along with the bill for \$3.00 worth of vegetable seeds (at ten cents per package, you can see we were in for some kind of mass production), we also had two dozen plants each of tomatoes, strawberries, and bell peppers. I was a bit horrified when confronted with this, for as my previous experience in farming had been highly successful (though confined merely to a few radishes and carrots), the vegetable garden had been earmarked as *mine* — and the plot was not yet fully prepared.

That night I spent dreaming of rows of vegetable seeds in everchanging order, trying to separate the squashes from the cucumbers and melons. By morning, I saw that I had wasted my time, for the snow was a good foot over my garden, and it was still falling fast. By mid-day, I could scarcely see the post box when the mailman delivered five bundles of twigs, each about eight to twelve inches long. Our trees from the Forestry Department had arrived!

Not being able to "heel in" the trees in the mounting snow, I put them in the laundry tubs to keep moist for a day or two. The day or two stretched into almost two weeks, and what a trick it was trying to maneuver the babies' washing between the five hundred trees and several

dozen vegetable plants! But the weather man finally smiled on us. We lost no time in planting our Russian Olives into a hedge, placing the Willows at strategic spots and putting the Evergreens into the sheltered area we had set aside for a nursery. I must admit that the unfortunate "waiting" period left its mark, for though the Olives, Willows, and Juniper are thriving, we lost most of the pine and fir seedlings in spite of our unceasing efforts to save them.

From the time-table for planting I had obtained from the Agriculture Department, I carefully mapped out my schedule for sowing my vegetable garden. I had already hastily planted the tomatoes, strawberries, and peppers, and thrown in some corn kernels in an odd moment; so, I proceeded from there. As I happily envisioned myself canning and freezing enough to see us through the winter as well as the summer, I sowed a little bit of everything, planning for second crops to follow.

Then I turned my attention to the flower gardens. My attempts at growing my own plants from seed had met with various disasters, so besides planting many annuals from seed, I purchased several flats of flowers. This proved a very provident move, for no sooner had I planted all my seeds than our water pump broke and our water supply for the next few weeks was sporadic to say the least. In the ensuing battle of the elements, my seeds were lost—all of them—vegetable and flower alike.

Next we were invaded by the tent caterpillars—billions of them in our only shade tree. We hastily called Mr. John Swingle, who discovered while spraying them that we had fire-blight in the apple trees. The cure for that was a painful one requiring us to sever by hand each infected branch with a sharp tool, dipping it

in alcohol after each cut. He also must have gazed at the rest of our struggling acreage with a discerning eye, for, lo and behold, a few days later we were visited by an awe-inspiring group of men—all the big wigs in the horticulture field. Perhaps I'm wrong, but I think they felt that embodied in our yard were all the ills and misfortunes of domestic agriculture. These experts inspected our trees and operated on a few. They surveyed our grass, finding "fairy rings" here and there. They examined our wilting apple trees and prescribed an 18-inch trench be dug all around them and filled with fertilizer. And, of course, there was the fire-blight. When they departed, we felt like fond parents whose whole family has undergone surgery and were left with the therapy program in their hands.

While all of these woes were occurring in the other areas of our yard, my flower gardens were truly doing themselves proud. In spite of the obvious fact that I had over-expanded myself, the flowers seemed to sense my inadequacies and bent their every effort into making up for it. Of course, they did not do it alone, for they were aided in this feat by my husband's pet project, the compost pile.

For those who do not know (as we did not know before this venture) what a compost pile is, I will unscientifically explain. It is a pit, or several pits, in which humus is manufactured by the decomposition of leaves, grass clippings, fertilizer, table scraps, dirt and similar organic matter. When these materials have decayed, a very rich humus is produced. We were fortunate when we first moved in to have a large pile of rotting apples with which to start our pile. Then we cleaned out the chicken house into the pit, raked in the few

leaves and grass clippings we had before the first snow, and with a little dirt thrown over it all our compost pile began its existence.

As we would read articles on composting, new ideas would develop. For a time, I separated the food scraps, saving the raw fruits and vegetables for the compost. Then we read that coffee grounds and egg shells were beneficial. But when it was recommended that any and all garbage was good, our garbage collector rebelled. Thank heavens for that! My kitchen work again returned to normal, and from then on I eyed all new composting ideas with a dim view, especially when my husband mentioned raising worms to enrich the soil. That was the last straw! I assured him that my flourishing flowers and shrubs were evidence of how rich the humus of his compost already was without domesticating worms.

By the time I got back to replanting my vegetable garden, gigantic weeds had taken over. I remembered the cheering words of some lecturer on the *Green Thumb* program that said if soil would produce good weeds, it would produce good vegetables. In that case, I had top vegetable producing soil if only I could find time to get the weeds out and the seeds in. But somehow, painting the house, making formula, and keeping two babies in diapers kept interfering, and harvest time found me with only three crops—corn, bell peppers, and zillions of tomatoes. All had thrived on neglect. Just think what I could have reaped had I carried out my intentions!

Now it's another year. I'm still equipped with the vegetable seeds, even richer soil, and enthusiasm that's only slightly diminished. I'm already up to my ears in new ideas, and I think my thumb is beginning to turn a very pale green.

OYSTER SHELL SCALE

By EARL SINNAMON

As the name Oyster Shell suggests, the protective coating of this insect is shaped like a tiny oystershell, but there the resemblance ends. The scales are about one-eighth inch long and one-sixteenth inch wide with a brown-gray appearance. They cluster in thick masses on the young twigs and branches where the bark is tender and they can easily suck out the sap.



The insect over winters in the egg stage and the young hatch about June 15th, crawl about for a few hours, then settle down in a permanent location. Immediately they begin feeding by inserting their beaks into the bark and at the same time excrete a waxy material to form the protective scale.

Most species of ash, poplar, willow, cotoneaster, lilac and several other trees and shrubs are hosts for the insects. Infested plants have sparse foliage with numerous dead branches and twigs. Soon the entire plant becomes so weakened it has to be removed.

An application of 9 percent dormant oil spray when the plants are not in leaf will give satisfactory control.

COLOR IN THE GARDEN

By PERSIS M. OWEN

SO MUCH advice has been written upon the subject of color in the garden, what combinations to use, where to use, when to use, how to blend, where to blend, when to blend, and so forth, and so forth, that to many of us, color in the garden has become a bothersome complex problem, instead of the simple pleasurable fact, that if we plant flowers, and they grow and bloom, we are going to have color in our garden, come what may.

There are, however, three or four simple little hints that if we use them, will help us heighten our color effect.

First, we should mass our color. The large scale of the outdoors, the preponderance of green which is ever

present makes this imperative if we are to get the full benefit from our planting. For example, a dozen or so pink phlox planted together, as a mass, and this grouping repeated three or four times down a perennial border, will give a greater feeling of pink in the border than if we had scattered the same number of phlox singly through the border. Bold groups of the same color is the answer to color effect out of doors.

Secondly, we can not afford to be too subtle in blending our groups of flowers. Flower colors are usually tones of some color and not the true color, so they naturally tend to blend themselves with their next door neighbors. The atmosphere, light and shade

Restful patio in the garden of the author.



and distance also have a blending and subduing effect. Contrast of color gives more color effect than blending.

Third, a plentiful use of white offsets the eternal green and brings out the other colors. It also makes the garden show up at night.

Fourth, the color of all furniture, furniture coverings, awnings, umbrellas, and other accessories used in a garden should be of a fairly neutral color, keyed far below the flower colors. For example, we seldom have space enough to make a mass planting of yellow flowers, or any color flowers for that matter, which can compete with a five-foot bright yellow garden umbrella, and matching chairs. The eye is bound to focus on the expanse of yellow canvas and our flower planting in comparison will look weak and insignificant. We should not introduce large bright splashes of color into the garden if we want our flower colors to stand out.

If we keep in mind these four simple hints, i.e., mass our colors, forget about blending, use a lot of white, key our garden furniture toward the neutral, we will have a showy pleasing color effect in the garden, always provided of course that by watering properly, fertilizing frequently, spraying often, and cultivating incessantly, we can make the darn plants flower.



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HIDDEN HUNGER

A Book To Be Read by Everyone
Who Eats—Helen Fowler

The authors, two internationally known nutritional experts tell us that too much dependence on an every day diet of meat, potatoes, white bread and sweets, although satisfying hunger, has left us a nation of well-fed but undernourished people, and that "Hidden Hunger" is America's real health tragedy.

The most important problems discussed in this volume are: Women's role in applying the newer knowledge of cookery and nutrition; importance of education and changing food habits; and, lastly, a broad discussion of the causes of poor diets. These causes may be lack of money to buy sufficient food at our present high prices, ignorance in preparing food, or reluctance to put good nutritional principles into every day use. (For instance, the average working girl lunching on a cigarette and a "coke" in the drug store, every noon, about town—this practice alone may be the cause of thousands of illnesses each year.)

As you read on you will feel that the progress of man's health is not measured alone in terms of the amount of food, but by the supply produced on the basis of the nutritional content of the food. Man's hunger will never be solved by overflowing warehouses alone.



HOW TO GROW GLADIOLUS

By WM. H. LUCKING

GROWING glads is not hard. Any good garden soil with a sunny location will grow them. Glads do not fit into flower beds or borders very well. It is better to grow them in beds by themselves.

Glads can be planted as early as the last part of March and planting may continue every two or three weeks until the last of May. By doing this you will have blooms all summer. Plant them in rows about 12 inches apart, 4 to 6 inches deep and about 3 inches apart in the rows.

Before planting, glad bulbs should be treated with Lysol or DDT dust, to be sure that all the thrips that may have wintered over on the bulbs are killed. Another thing to remember is to select good sound bulbs. That is, bulbs that do not have any rot or scab on them. Do not fertilize your glads too much. They will not tolerate much fertilizer. When they start to show flower spikes they should be given a lot of water.

Glads are one of the best cut flowers we have. When cutting them, be sure to leave some leaves on the plants. In order to save the leaves, take a knife and cut down each side of the stem and give the knife a twist at the bottom. By doing this you will be leaving most of the leaves on the plant. Plants left without leaves will not develop good bulbs.

Glads multiply by new bulbs and by bulblets. By keeping the bulblets and planting the next year, you will always have new stock.

Bulbs should be harvested and stored for the winter after the first hard frost. First dig and cut the tops

off. Then let the bulbs dry thoroughly before you store them away. Take off the old bulb and put the new ones in a shallow box or container, keeping them in a cool dry place. It is a good practice to dust them again at this time with DDT to keep them free from thrip.

SIZE AND SPACING OF TREES FOR PLANTING OPERATIONS

By R. S. BARNHARDT,

Supt. of Parks, Akron, Ohio

In the planting of any street one of the most important factors in spacing would be the ultimate size and shape of the tree. Large spreading trees should be spaced farther apart than the columnar varieties. Some of the newer, smaller growing trees should be planted closer together than the maples or oaks. It is hard to conceive of any good planting closer than thirty-five feet and that only in the case of very small growing trees. I believe that fifty-five feet is pretty well accepted as the standard for our normal trees.

We try wherever possible to figure one tree to a lot. We always try to spot the tree about 6 feet off the center of the lot. This provides for future driveway construction and also eliminates a lot of utility pole interference and also a great deal of street light obstruction. The utility poles are usually spotted on or near the lot line.

—From *Arborist's News*.

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Arrangement of gladiolus on opposite page by Mrs. C. Earl Davis. Photo by C. Earl Davis.



OUR GARDEN CLUB WORKS

By GRETCHEN CLAYTON
of The Open Gate Garden Club

WE WERE a new Garden Club, organized in Englewood in the spring of 1951, and were looking for a project for our club—one which would cost little, since our treasury balance was small. The work which might be involved was not given much consideration.

That project was found in our new City Park. A rubbish strewn bank, directly back of our new City Hall, about 100 feet long by 6 feet high was chosen for a rock garden. The ladies of the Club cleaned the rubbish from the bank and hauled the rock. This required several trips to the nearby mountains with trucks donated and driven by club members.

Some of the rock was fairly large considering that the ladies had to lift them on to the trucks and put them in place on the bank, but some larger rocks were desired. As time goes on we hope to be able to get some larger ones which will add to the beauty of our garden.

Members were asked to donate only desirable plants from their own yards. This rubbish strewn bank turned into a beautiful rock garden in one season. Many varieties of bulbs, including tulips and narcissus, have been added. The cost of this project was small but involved a lot of hard work. We had lots of fun and we have a beauty spot in our park!

AFRICAN VIOLETS—SAINTPAULIAS

By GARNET H. CAMPBELL

The African Violet is, of course, not a violet at all, even though it does come from Africa, and its most usual deep purple blooms are of violet form and color. Actually it is a member of the Gesneria family, to which belongs the velvet-leaved gloxinia. It was discovered by Baron Walter von Saint Paul, some fifty years ago in the hilly regions of eastern tropical Africa. Today it is the most popular of all house plants.

The first real test of the African Violet's popularity was in the fall of 1946, when an Atlanta, Georgia, nursery sponsored the first African Violet Show. The thousands who attended from everywhere created a traffic problem. Today they are prepared to handle such crowds. As a hobby, they offer a challenge and great pleasure. Their beauty is unsurpassed.

African Violets under the hand of man have been vastly improved and many new colors and forms have been produced. A quite spectacular plant, that will stir the imagination, is *S. Groeti*, the trailing or creeping African Violet, a new species plant imported from Africa. Horticulturists are busy hybridizing and there is no end to the new varieties produced. The flowers today come in many colors; blue, purple, white, rose, pink, red, wine and bi-colors. There is no yellow African Violet to date. There are many beautiful doubles.

The flowers are delightful, and we all love to see them bloom, but the foliage itself is outstanding. There are many types, girl, lacy, du pont, spooned, scalloped and others. Some leaves have wine-red under-foliage, and others are white at the base.

Fluorescent lights used to grow plants are the coming thing. People

in apartments may enjoy the same window garden privileges as people in the suburbs. Flower lovers who do not have windows in homes may now grow plants under artificial light. Many commercial growers are raising African Violets under fluorescent lights.

Once you start propagating you'll feel like the old woman in the shoe—you'll have so many "children" you don't know what to do. There is no stopping them—saintpaulias are the easiest of plants to increase by division, offset, leaf cutting and seed. The first three vegetative methods produce identical to the original, but with seed anything can happen and resulting plants may differ entirely from both parents.



The problem of where to put all my plants was solved by having my porch glassed in, and shelves built in the windows. A Lazy Susan is very attractive and holds many plants.

African Violets need good light, but never direct sun. We use bamboo shades on the windows. The filtered light proves very successful.

PLAN NOW FOR WINTER GARDENING

By BETTY LOU THOMPSON

ARE you a gardener who becomes a trifle bored during the winter, one who finds herself longing for spring along about January—or sooner? If so, a greenhouse, large, small or very small, is the perfect solution for you. This might seem an inappropriate time to be thinking of winter gardening, with the whole out-of-doors bursting into bloom. From my own experience, however, starting your planning and construction now, with plenty of time before fall, would save lots of wear and tear on your nerves, to say nothing of the other advantages. Our small lean-to type house was constructed in November, 1951. Plans went along smoothly enough, but with several of the usual unavoidable delays. Each such experience was agonizing, as I was at fever-pitch to get started. Seeds planted earlier were crying to get into larger quarters and the house was overflowing with plants brought in from the garden. How much nicer to have had the whole summer ahead and no feeling of hurry!

Since no greenhouse is large



enough, and, on the other hand, there always seems to be room for just one more pot, I feel that size is unimportant and quite up to the individual. It should be planned, however, so that every bit of space can be put to use. Our own house is quite small, seven by twelve feet, but I am sure it has given more pleasure per square foot than any like amount of space anywhere, it is built against the house on the south, and three feet below ground in order to get below the kitchen windows. This tends to save heat in winter and makes it cooler in summer. The sloping roof is glass, as are the sides down to ground level. Below ground the walls are of cinder-block. There are two sturdy redwood benches, one on each side, which are filled with soil to a depth of eight inches. On the back wall are shelves for potted plants. A ledge on the other three sides, just below the glass, is wide enough to hold pots. The floor is gravel, which can be wet down to increase the humidity. A wide board in the aisle between the benches makes a better walking surface. We use an electric heater equipped with fan and thermostat, but during a few of the winter months it is a little expensive. A gas heater would be quite a bit cheaper and we understand that the natural gas used here is not harmful to plants. A vent would be necessary, however. With the very bright sunshine here we have found it essential to shade part of the roof with bamboo roller blinds. The plants that can't stand too bright a sun are kept under this protecting filtered light. Enough ventilation is provided by the four windows, but in a larger house, roof ventilators would be necessary.

The first winter of our exciting project was experimental, as we like a variety of plants and couldn't imagine settling down to a few specialties. According to the books, you really should confine your growing to a group of flowers that like the same temperature. For instance, snapdragons, stock and freesias like a cool house, 45 to 50 degrees, while hyacinths, violets, roses and orchids prefer a temperature of 55 to 70. Accordingly, we compromised on a medium temperature of 50. Plants seem to adjust and although they may not be quite as perfect, give a lot of satisfaction and make possible a wide selection.

I had started seeds of snapdragons, stock, calendula and alyssum earlier and they were put in the benches as soon as they were ready in December. The alyssum was planted on the outer edges and made a pretty, fragrant border. Another greenhouse enthusiast, Mrs. Daisy Pinkerton, helped us get started by donating a variety of interesting succulents, geraniums and a white marguerite which bloomed constantly.

In October I had potted a quantity of bulbs, tulips and narcissus of the kinds recommended for forcing, hyacinths, Dutch iris and crocuses. These were buried in a pit and covered with dirt and leaves until January. They were then brought into the greenhouse a few at a time to give bloom over a long period.

Freesias, calla lilies, ranunculus, Croft and Estate lilies were potted in November and left in a dark cool corner of the basement until ready for the greenhouse. All bloomed, but the lilies were too late for Easter. There is more to learn about the timing. We particularly liked the freesias with their delicious scent.

In line with experimenting and wanting to try everything the first year, I had potted a number of perennials from the garden just before freezing. These included columbine,



Canterbury bells, delphinium, and even a floribunda rose and a flat of hybrid bearded iris. These were covered with leaves and left in a sheltered spot outside until January. All bloomed well ahead of their usual time. The roses were of good quality, but not as profuse as those outside. The iris seemed to do even better than usual. A half dozen carnation plants furnished two or three fragrant blooms at a time, over a long period.

A few cattleya orchids were definitely an experiment, as I knew they really prefer a warmer temperature than the 50 degrees on which we had decided. They too adjusted, however, and after a year have all bloomed and have new leads. It might be of interest to tell you that they are quite easy to care for and are more disease- and insect-resistant than most plants. They are always a source of interest to visitors, even when they are not in bloom, as their way of growth and heavy strange leaves are a surprise to many people.

Although space was very limited by spring, we found room to start seeds for annuals for the garden. It was a joy to have all we wanted for ourselves and to give to friends.

Contradictory as it may sound, our experimental year was a failure as it was to serve as a process of

elimination. Since everything turned out with some degree of success, that was no way to eliminate. Our second year has simmered down a little, however, to just our very favorites, and there is less congestion than a year ago. One lesson we have learned is that we need more bloom from November to January. Chrysanthemums are a "must" next year, to fill in during this period, because we have heard that they do exceptionally well, with a profusion of bloom.

As you can see, there is no end to the variety of plants that can be grown under glass. Your own likes and dislikes may be the only limitations. Working with plants at a convenient level, spraying, feeding and watering—all may be done with less effort than outside. Many older people might find this ideal gardening, winter or summer. Flowers available at all times for house or for friends is just one more conclusive argument for greenhouse gardening.

BLUEBELLS GET THE GONG

POTASSIUM CYANATE AS A WEED KILLER

By MAX BAUER

Landscape Gardener, Fitzsimons Army Hospital

A FEW years ago during our annual Rocky Mountain Horticulture Conference I attended a lecture about new chemicals used as weed killers. One of them (sold under the trade name of Aero Cyanate) had been experimentally used for the control of weeds in young onion beds.

During the following discussion of this subject I introduced myself to the speaker and asked his opinion as to the merit of this chemical in controlling weeds in an asparagus field. He told me that to his knowledge it had not yet been tried on asparagus but that he would be willing to furnish me with enough of this material to make a trial test during the coming season.

The asparagus field in question was located on an east slope too steep for irrigation and therefore an overhead sprinkling system had been installed in order to properly water this ground. For many years no other fertilizer had been used but a heavy application of cow manure every fall which was hoed into the soil in the early spring a few weeks before the new shoots of asparagus appeared,

which was approximately the last week in April. At this time regular watering also was started to stimulate a healthy and continuous growth of the plants during the following season.

For a few weeks the rows of asparagus stayed fairly clean of weeds, but by the latter part of May and the first part of June the weeds came so fast and thick as to form a regular lawn, which made it very hard to find the young shoots at the daily cutting. For many years hand weeding and other means to get rid of these weeds had proved to be very costly and cumbersome. Several attempts of weed control with 2,4-D had proven only partly successful, since not only the weeds but also the young asparagus shoots had wilted after its application. Therefore, 2,4-D was not the answer to solve this problem and I was willing to try some other chemical, which in this case was Potassium Cyanate (not to be confused with the poisonous Potassium Cyanide). This is a white and flaky material easily dissolved in water.

I started my experiment on a clear and windless morning on June 6. In order to find the proper amount of Potassium Cyanate to get the right mixture for this spray solution I sprayed different rows of asparagus with mixtures of different strengths until I finally found that a solution of 4 ounces of Aero Cyanate per gallon of water gave the best results. Though all the weeds were not killed, the remaining ones were stunted in growth for several weeks while the young asparagus shoots stayed fresh and tender. Then another mixture of the same strength was applied on June 19 and the last one for that year on July 13 when the cutting season of the asparagus had ended and the plants were allowed to grow naturally. No bad effects could be observed on the growing plants in comparison with their growth in former years. The same procedure on similar dates was followed the next year with equally good results.

As I had enough material on hand for other experiments, I tried this chemical on a patch of Poverty Weeds in the same neighborhood. However, for best results I had to increase the strength of the spray mixture to 5 ounces of Aero Cyanate per gallon of water. After the first application the tops and roots of this plant died back to within several inches in the soil, but did not kill off all the roots entirely and, therefore, new shoots appeared again after several weeks and spraying had to start all over again. Although there was no complete kill of these weeds, the application of this chemical solution kept them from going to seed.

The same mixture of 5 ounces of Aero Cyanate per gallon of water also proved very successful in eliminating a certain variety of Blue Bells, *Campanula Latifolia*. These flowers had become a real garden pest and

formed an undesirable groundcover in a shrub border planted with Mock Orange, *Philadelphus coronarius*, and small spreading Junipers, *Juniperus Chinensis*. After one application on June 8 of the same year no more new plants of this species appeared until late in September. These were probably the result of seeds not covered by the weed killing solution. Another application on the following year and about the same time in June cleared this plot completely of Blue Bells.

All spraying was done on windless days to prevent drifting to adjoining areas of flowers, vegetables, and shrubs. A 3 gallon tank was used for all experiments with the nozzle adjusted to a very coarse spray. Regular watering of all tested areas was continued throughout the growing season.

CONSERVATION, A NEW IDEA?

There are mountains in Attica which can now keep nothing but bees, but which were clothed, not so very long ago, with fine trees producing timber suitable for roofing the largest buildings, and roofs hewn from this timber are still in existence. There were also many lofty cultivated trees, while the country produced boundless pasture for cattle.

The annual supply of rainfall was not lost, as it is at present, through being allowed to flow over a denuded surface to the sea, but was received by the country, in all its abundance—stored in impervious potter's earth—and so was able to discharge the drainage of the heights into the hollows in the form of springs and rivers with an abundant volume and wide territorial distribution. The shrines that survive to the present day on the sites of extinct water supplies are evidence for the correctness of my present hypothesis.—*Critias* of Plato (427-347 B.C.)

BLOSSOMS IN THE DUSK

By HELEN COURCIER

DO YOU have a shady garden? If not, a wonderful treat is in store for you at a minimum of cost and effort. It need not be large, nor does it require any special soil type.

My own shady garden is a plot roughly four feet square formed by an ell on the northeast corner of our house. Most of the bed is in deep, day-long shade and the garden is cool and infinitely lovely to look at on the most scorching summer day.

The plants for your shady garden offer an endless variety of color and may be worked out in almost any way you choose. I have little time to spend on mine and so I have made it very informal and without too much thought to color schemes.

On the outer fringes which get perhaps two hours of full morning sunshine, I have planted purple Aubrietia, or Rock Cress. This plant creeps along the ground or over rocks if you prefer, and in early May covers itself with a royal blanket of deep purple bloom. Intermingled with this I have added some Phlox Subulata (the creeping phlox) in a deep shade of pink. This may also be had in blue, red, and pure white if you are working out special color effects.

Interesting shady nook in the garden of David G. Gordon, 768 Detroit.



Next I have deep rings of Primula. Mine are the English Primrose in all colors from pale cream to deep reds but here again there is an almost endless selection. At the outer edges I have a few Ring or Fire Primrose, which raise their crimson blossoms daringly on long stems. Here too I have a few Coral Bell because they bloom a little later in the season.

In the very center, for height, I have two old-fashioned Bleeding Hearts (*Dicentra Spectabilis*) and an assortment of hardy garden fern.

Now back in the darkest shade I have Forget-Me-Not, Lily of the Valley, and Lungwort. Of all my dainty shade plants, I believe that Lungwort brings me the greatest pleasure. The leaves are long, deep lush green, mottled with white spots that are attractive the entire summer. But the blooms, which come long before your summer garden is in bloom will delight your heart. They come in great profusion, blooming in pairs, two delicate little clusters one pink, one sky blue. What could be lovelier?

And of course I have only scratched the surface. There is such a variety of these miniature shade plants that you will perhaps want to change them from time to time, although every one I have mentioned is hardy.

If you prefer height you may choose any of the Columbine. Here in Colorado our state flower is the slate blue Columbine but the growers can offer you this old favorite in white, orchid, deep red, yellow, or almost any combination of these colors. Then for your sunny fringes you might like Nierembergia Purple Robe which blooms almost all summer in a riot of cup-shaped lavender blooms. Five hundred flowers in a single season is not unusual for Purple

Robe. Or for that sunny spot you could choose pansies or any of the striking new violas.

But if you want something a little more exotic put in a few bulbs of the "wild" tulips. I chose Kaufmanniana because they are indescribably lovely, but if you would like a later bloomer try *Dasystemon* whose canary yellow

blooms are equally lovely. Both these tulips are natives of Turkistan and like all the other plants I have mentioned require almost no care after planting except watering.

Why don't you start your shady garden now and turn a rather gloomy segment of your life into a vista of breath-taking beauty?

MY ROCK GARDEN

By MRS. AGNES MAGNUSON

LOOKING out across the lawn from my breakfast nook window toward my rather small garden recalled to my mind the occasion of its making.

When we built our home 13 years ago, my husband, who mines feldspar in Colorado and Wyoming, had two huge petrified logs, weighing twelve and fourteen hundred pounds each, shipped in from Buena Vista, Colorado, where we were mining feldspar at the time. We also brought, from one of the mines, another large rock weighing about six hundred pounds. We placed the three large rocks in a semi-circle along one side of our yard intending to make it a sanctuary for mountain flowers brought from various mines throughout Colorado and Wyoming.

At first, we did not think of making a pool, but after the rocks were placed, my husband dug a pool between the three large rocks and piled the dirt up behind them thinking he would remove it later. Instead we fertilized the soil and sprinkled some rock garden flower seed over the mound for the first year; then, after that, each trip to the mines added some beautiful mountain flowers, but not enough to cover the mound. Gradually I have added various perennials and smaller rocks such as rose

quartz, fluorspar, white quartz and smaller petrified rocks. The mountain flowers have gradually given way to perennials and annuals set in each spring for color. We still have seven clumps of wild iris from South Park and Wyoming that bloom beautifully quite early in the spring. Under the edge of the rocks you will find the small mountain fern.

I use the tall clumps of Siberian iris around the back of the mound and around the large rocks. The Basket of Gold sweet alyssum makes a splash of yellow color that can't be beaten. We have a collection of the traditional rock garden plants such as creeping phlox, violets, dwarf iris, perennial candytuft, Iceland poppies, stonecrop sedum and many others.



THE USE OF SAWDUST AS MULCH

By WESLEY P. JUDKINS

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THERE has developed in recent years a real appreciation of the value of sawdust as a mulch around berry bushes, strawberry plants, shrubs, and in vegetable gardens. However, large numbers of growers hesitate to apply sawdust to their soils because of the fear of toxic substances which are supposedly present in this material. Most folks have also been led to believe that sawdust would make the soil acid. Still others are concerned that a deficiency of nitrogen might develop in the soil which will seriously reduce the growth and yields of plants around which the sawdust is used as mulch.

It is time to remove the cloak of superstition and speculation from this subject. The use of sawdust as mulch is too valuable a practice to be restricted by unfounded prejudices and half-truths. In many sections of the country there are large piles of sawdust which are going to waste or are being burned because people in general do not appreciate the true worth of this valuable by-product of the lumber industry.

Benefits of Sawdust Mulch

The greatest benefit is derived by allowing the sawdust to remain on the surface of the soil as a mulch. In this position it conserves moisture, reduces the runoff of water during rainy weather, helps maintain cool soil conditions during the hot summer months, and to a limited extent suppresses the growth of weeds.

Several additional benefits are realized when sawdust is incorporated into the soil after it has served its purpose as a mulch. Heavy soils will become lighter and easier to work whereas light soils will have a higher

water-holding capacity. When the sawdust has decomposed into humus it increases the nutrient-holding ability of the soil. This may be of real importance in sandy soils.

Sawdust Does Not Increase Soil Acidity

Contrary to popular belief, sawdust does not cause the soil to become acid. Numerous tests conducted by research workers in different parts of the country bear out this conclusion. Griggs and Rollins of Connecticut, Johnson and Ware of Alabama, Gourley of Ohio, and McCool of the Boyce Thompson Institute have shown that various amounts of hardwood or softwood sawdust used as a mulch or mixed with the soil for periods of from one to twelve years have had no significant effect on soil acidity.

The acidity of the soil changes from year to year, principally because of variations in rainfall. The addition of sawdust may cause a minor but much less important temporary increase in acidity. The final effect, however, is to help maintain or increase the basic reaction of the soil.

No Seriously Toxic Compounds in Sawdust

No conclusive evidence appears to have been published to support the claim that sawdust contains toxic substances which will inhibit plant growth. There are no known chemicals which are commonly found in either hardwood or softwood sawdust which would be injurious to plants. The sawdust of some trees contains large amounts of tannins and terpenes. These appear to have no serious detrimental effects, however, because normal crops have been pro-

duced on soils to which large amounts of tannin or tannin-containing materials have been added.

Sawdust May Cause Nitrogen Deficiency

It is a well-known fact that a deficiency of nitrogen may develop if appreciable amounts of organic materials are mixed with soil. This deficiency develops because the bacteria which decompose the organic matter tie up the soil nitrogen in an unavailable form. Therefore, when sawdust is mixed with the soil a supply of readily available nitrogen should also be applied. Enough fertilizer should be added to give dry sawdust the equivalent of 1.5 percent nitrogen. In experiments where yields have been depressed because of nitrogen deficiency, the supplemental nitrogen applications have been less than the recommended 1.5 percent. If the sawdust is several years old and is partly decomposed, less nitrogen will be needed.

When sawdust is used as a mulch on the surface of the soil, there is little danger of nitrogen deficiency becoming a serious problem. If the leaves of plants growing under such conditions start to become light green or yellow a side dressing of readily available nitrogen will quickly correct the condition.

Kind and Amount of Sawdust to Use as Mulch

Either hardwood or softwood sawdust may be used in a fresh or weathered condition. Sawdust which is partly decomposed will, of course, cause less nitrogen deficiency than will new material.

A one-inch layer of mulch is sufficient to give optimum moisture conserving and soil cooling effects around shallow rooted crops like vegetables and strawberries. A thicker covering will be of little additional benefit and

will add to the problem of nitrogen deficiency when the material is ultimately incorporated into the soil. Heavier mulches, up to several inches deep, may be used for deeper rooted perennial plants such as berry bushes, ornamental shrubs or fruit trees. A heavy mulch in the vegetable garden may tend to reduce soil aeration in a wet season and have a somewhat suppressing effect on growth.

Ordinarily it is advisable to purchase sawdust by the cubic yard rather than on a weight basis. One cubic yard will provide a one-inch mulch over 324 square feet of area. About 4 cubic yards are required to apply a one-inch sawdust mulch to a vegetable garden 30 feet wide and 40 feet long. A one-inch mulch for an acre of land requires 134 cubic yards. The dry weight of the organic matter in a cubic yard of sawdust may vary from 200 pounds for softwood sawdust to 300 pounds for hardwood material. Fresh green sawdust or weathered sawdust containing moisture may weigh two or three times as much as air dry material.

If a one-inch layer of hardwood sawdust is incorporated into the top 6 or 7 inches (plow layer) of the soil the organic matter content will be increased approximately 2.0 percent. This figure is obtained by the following calculation: 134 cu. yd. sawdust x 300 lbs. per cu. yd. = 40,200 lbs. dry organic matter divided by 2,000,000 lbs., the weight of the plow layer of a silt loam soil. If softwood is used a one-inch layer will increase the organic matter content of the plow layer about 1.4 percent.

Sawdust starts to decompose as soon as it is incorporated with the soil. The rate of decomposition depends on the temperature, moisture content and aeration of the soil. No figures are available which can be used to estimate the speed of breakdown

under various climatic conditions. Sawdust is a relatively stable type of organic matter which decomposes more slowly than most cover crops or crop residues.

If sawdust is not available, fine shavings or wood chips may be employed effectively as a mulch. Other organic materials such as peanut hulls, ground corn cobs, peat moss, or straw may also be used if available at an economical price. However, straw frequently contains large quantities of weed seeds which are a disadvantage in either home gardens or commercial plantings.

Sawdust as Mulch in the Vegetable Garden

When sawdust is used as a mulch for vegetables it may be applied when the seeds are planted or after the young plants are two to three inches tall. The best results are usually obtained by applying a thin layer slightly less than one-half inch thick over the entire garden immediately after the seeds are planted. The young seedlings have no difficulty in growing up through this thin mulch. In fact, the mulch helps to reduce the crusting of the soil and conserves surface moisture so that the growth of the young seedlings is usually improved compared to bare soil.

After the vegetable seedlings have developed to a height of two or three inches, more sawdust should be added to give about a one-inch layer over the entire space between the rows and around the plants in the row. If no mulch was applied at planting time, the entire inch layer should be added when the young vegetables are two to three inches tall. A thinner mulch will not give maximum moisture conservation or soil cooling effects, whereas a heavier mulch increases the expense without giving added benefits.

Weed seedlings will grow up

through the thin half inch mulch just the same as vegetable crops. One practical method of control is to allow these weeds to grow to a height of an inch or two and then apply the additional mulch which will cover the weeds and tend to smother them. A few may come up through the mulch but these can be carefully cut off with a sharp hoe or pulled by hand. The sawdust should not be stirred into the soil because this destroys its value as a mulch. Also, every time the soil is stirred by cultivation or hoeing, weed seeds are brought up near the surface where they will germinate. Therefore, each time a garden is cultivated in the usual way, one crop of weeds is destroyed and another is planted.

When sawdust mulch is used and the first crop of weeds is destroyed by smothering with mulch, pulling, or carefully cutting them off with a hoe, there will be only minor second and third crops of weeds. Thus, the use of the sawdust mulch does not actually suppress weeds but does reduce to a considerable extent the number which will develop during the season. The mulch has no suppressing effect on quack grass or Bermuda grass. In fact, these grass type weeds may be more difficult to control in a mulched garden than in one which is cultivated.

If the sawdust is not used in the garden until the vegetables are several inches tall, it will usually be advisable to cultivate or hoe the land at least once to destroy weeds before the mulch is applied. If a full one inch sawdust layer is then placed on the soil only a rather light crop of weeds will usually develop. These can be pulled by hand or carefully cut off with a sharp hoe. Avoid stirring the soil which would encourage the growth of more weeds later in the summer.

When the vegetable garden is plowed in the winter or spring, the sawdust is turned under just as is the plant refuse and weeds on the surface of the soil. Although nitrogen fertilizer may be applied at this time to overcome any tendency toward nitrogen deficiency, it seems best to apply the fertilizer as a broadcast application just before the land is harrowed in preparation for planting. On an average fertile soil, about 500 pounds per acre of an 8-8-8 fertilizer is recommended. For the small home garden a 500 pound per acre application is about 30 pounds applied to a 50 by 50 foot area.

As the vegetables grow during the summer the gardener should watch for any tendency of plants to become light green or yellowish in color. If such evidence of nitrogen deficiency appears, a side dressing of the above-discussed fertilizer should be applied along the row. A fertilizer supplying only nitrogen such as nitrate of soda, ammonium sulfate or ammonium nitrate is more quickly effective than the complete fertilizer. However, such material is not as easy to obtain as complete fertilizer for the average home owner.

Sawdust Mulch for Flowers

Sawdust may be used as a mulch for annual or perennial flowers just as for vegetables. For most flowering plants the mulch should be restricted to a depth of not over one inch. Heavy mulching may limit soil aeration and promote rot and stem rot organisms. The one inch mulch as suggested for vegetables will encourage vigorous growth and will promote abundant flower production over a long period of the summer.

Sawdust Mulch for Shrubs and Berry Bushes

Most ornamental shrubs will grow in a more vigorous condition if a

mulch of one or two inches of sawdust is maintained on the soil under the branches over the rooting zone. This is especially true of evergreen shrubs, particularly azaleas and rhododendrons. Most shrubs have many small feeder roots near the surface of the soil. These are injured if the ground is cultivated and also may suffer in a dry unmulched soil. A mulch of sawdust, peat, peanut hulls or chopped straw will be most beneficial for such plants.

The growth of berry bushes, such as blueberries, raspberries, blackberries, currant and gooseberries is usually much more vigorous and fruitful if a mulch is used around the plants. A one or two inch layer of sawdust or other organic mulch material is recommended. As this mulch decomposes into the soil additional amounts should be added to maintain the desired depth.

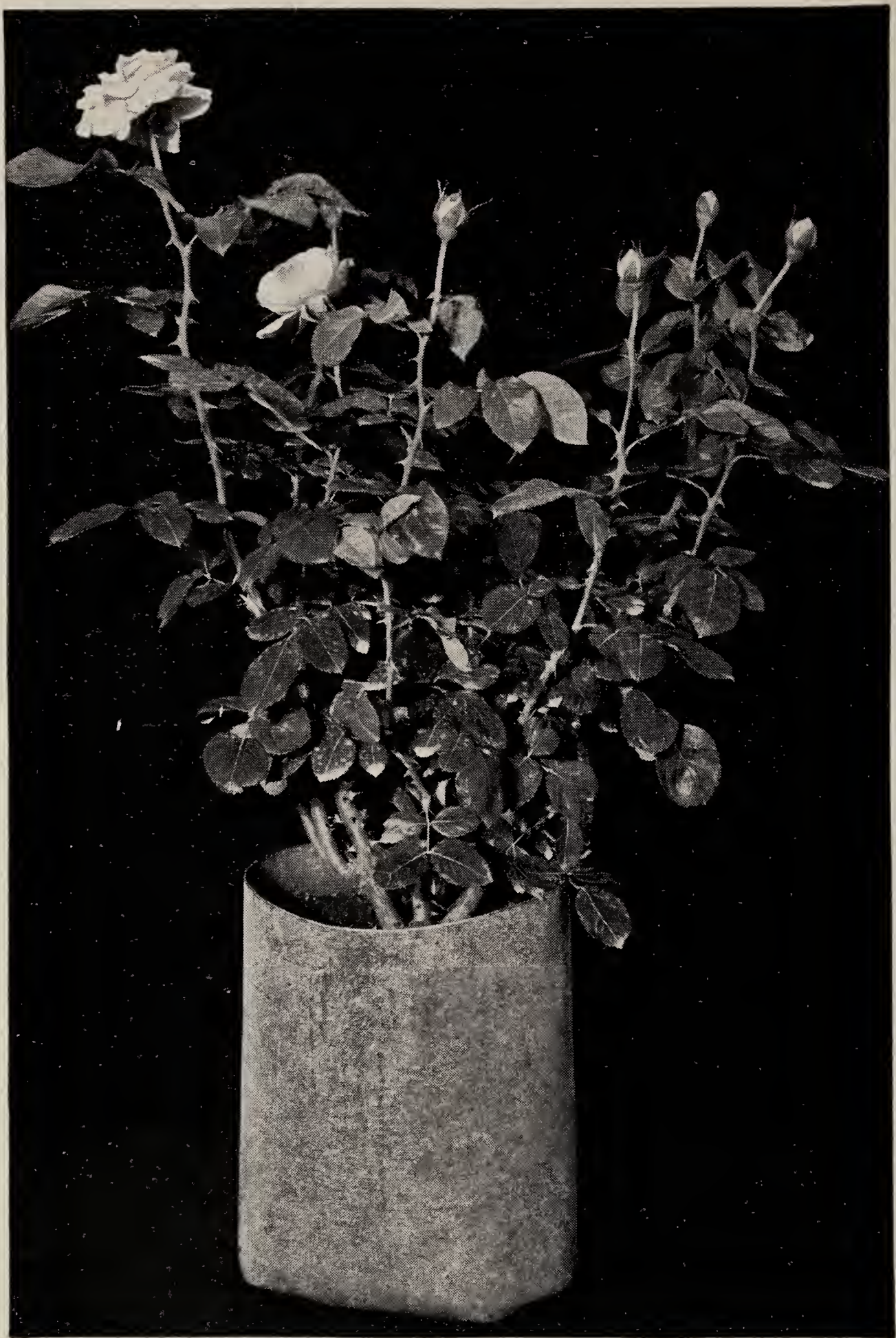
A mulch around grape vines may promote an undesirable succulent, vegetative type of growth on fertile soils in locations where adequate amounts of rainfall occur. A mulch may be quite beneficial for grapes on sandy or gravelly soils where the water supply may be somewhat short during the growing season.

Sawdust Mulch for Strawberries

Everbearing strawberries will produce large crops of fruit if grown in a hill system with sawdust mulch.

Sawdust may be used instead of straw as a mulch for single-crop June-bearing type strawberries. A one-inch layer is adequate to promote vigorous fruitful growth. This mulch should be applied late in the summer after the runners have become established. If a full inch of sawdust is applied there appears to be no need for an additional mulch of straw to protect the plants from cold during the winter.

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A MESSAGE OF GOOD WILL FROM A FELLOW WHO LIKES ROSES

By ARTHUR L. SIMPSON

I just received my copy of the All America Accredited Public Rose Gardens. May be because of that or because it was the night before Christmas, the mind of an old man is apt to take off over the back trail. Anyhow it comes to me that a more or less intimate association with roses covers more than a half century.

The first I can recall were the ones I found in the fence corners and on the edges of wood lots in central Wisconsin. They were mostly shades of pink, sometimes white and always single. They were hardy and thorny. They had to be because the land was pastured in summer or fall and Wisconsin winters were tough. I presume they were of the specie *R. acicularis*. None of our farmer neighbors had rose gardens or at least I cannot remember them but in the near by town of Ripon there were some of the Hybrid Perpetuals; the names I never learned.

By that time the Hybrid Perpetuals had been available for some twenty years and it would be twenty more before many Hybrid Teas would be in American gardens.

In 1892 our family moved to Denver, Colorado, and what with school and later a job I sort of forgot boyhood interest in roses. In 1905 I had a home of my own with a little spot on the east side of the house for roses. A Dorothy Perkins for the front porch; a couple of American Beauties; a Paul Neyron; a pink Briarcliff and a semi-double dark red that was the best bloomer of the lot.

They did pretty good the first summer but we had one of those dry cold

winters and in the spring they looked sick. I didn't know that I should have wet them down in the fall. Some of them lived but it took them all that summer to get going and I switched over to dahlias.

W. W. Wilmore was becoming known for his dahlias and his gardens were only a couple of miles from our home. I don't think I should be blamed too much for this digression. The foliage was attractive, the blooms ranged from white to just this side of black and from two inches to ten inches or more. The man had done wonders with a hitherto not very popular flower.

The spring of 1908 found my brother and me in the nursery business and I soon found that I had a lot to learn and had to learn it fast and under pressure because I was on the selling end most of the time.

Roses in particular brought headaches. The growers themselves had a lot to learn about grading, picking and shipping. There were no All America selections' committee and there were some duplications and many misfits. This sort of thing has been pretty well cleared up now but I think some catalog writers should curb their enthusiasm and leave a little to their customers.

Well that nursery venture, after a rather shaky start lasted thirty-six years, time enough to learn something about roses. Among other things, time enough to learn that when you get to where you think you know, you are due to take a fall and start from the bottom again.

Then another change of location;

this time to Caldwell, Idaho, and the Caldwell Municipal Rose Garden.

This garden was established in 1934 beautifully planned and skillfully planted. It was a beauty spot of Boise Valley for years but war time with its scarcity of planting stock plus two hard winters had reduced the plantings by three-fourths or more and some beds were without a bush. The city council decided to replant the whole garden and I was elected to do it.

Everyone got busy the first year; stores, fraternal orders, ladies' clubs and many individuals subscribed for beds of from ten to fifty plants and leading nurseries from all over the nation sent their latest and finest, a total of more than 1200 roses. The next year brought about the same number and at the end of this season, 1952, about 4000 roses were in place.

A check of the 150 varieties shows that only a few of the roses of twenty years or so are here. President Hoover is here also the Talisman, E. G. Hill, good old Sastago, Penaranda (glad they don't name 'em like that any more), Margaret McGredy and McGredy's yellow and a few more of that vintage. I don't know if that is good or bad but a lot of elderly visitors look in vain for their old friends.

Every summer a great many people say to me, "I wish our town had something like this." Well I don't see any good reason why, with a few exceptions, any town cannot have one. In areas where the winters are long and severe probably plantings might have to be restricted, at least at the start, to known hardy varieties.

Any local nurseryman can help there. Several breeders are giving special attention to the breeding of zero proof varieties with an eye to broadening their potential market and increasing the general interest in their product.

In every public garden project provision must be made for maintenance. Here at Caldwell all sponsors undertake replacements due to winter loss and the park department takes care of maintenance. New plants are ordered by the garden superintendent and the sponsor gets the bill.

The sponsors are interested in their plots and the occasional failure of three or four plants in a forty or fifty rose bed is not too serious.

Winter protection is a matter of local conditions. The best winter protection is seeing that the roses go into the winter in vigorous condition and with plenty of moisture at the roots. Where the frost goes deep a five or six inch layer of soil over the crowns will usually bring them through.

Great credit is due growers both here and abroad for the fine new roses that have come to us in the past five or six years. Many of them I have yet to meet but those we have in here and several others we hope to have are adding, or will add, interest and beauty to many a garden.

I am going to stick my neck out and recommend to western and northwestern gardeners some of those we in southwest Idaho are particularly happy with. We'll start with Sutters Gold and add Fashion, Fred Howard, Bravo, Helen Traubel, Saturnia Fandango, Mission Bells, Capistrano, then the latest arrivals Buccaneer, Ma Perkins and Chrysler.

Did you think I had forgotten Peace? Well I haven't, Peace is Peace, what more do you want?

Well, its almost a month ago the old man picked up that pen, it was dusty and rusty then, it will get that way again. Nobody was hurt. It's just a message of good will from a fellow, who likes roses, to everyone else who has the same weakness.

LILIES FOR COLORADO

By LEMOINE BECHTOLD

DO LILIES really grow and flourish in Colorado? Can they be happy here, make their adaptation to our bright sun and cool summer nights, our dry atmosphere and our alkaline soil? 'Tis only to follow a few simple requirements and admirers may raise at least part of the huge lily family in the particular soil of their own yard. The first requisite is the preparation of the soil. Most lilies require a light fluffy, fairly porous soil to guarantee good drainage. Very few of them will exist in heavy clay or water logged soil. I raise my beds three to five inches higher than the paths to facilitate drainage. Use plenty of peat moss and sand, also leaf mold if available, in preparing your beds. I do not recommend compost too strongly, in the earth around the bulbs. I have experienced loss of bulbs in compost prepared beds and I have laid it to diseases which may have developed in the compost pile, by way of the gleanings from the garden. It is all right to use the compost on the surface as a mulch. If your soil is already in a fairly well developed condition, it will only be necessary to prepare the soil immediately in the holes where the bulbs are to be planted. With newly purchased bulbs I meticulously prepare their planting. I place the bulb in a nest of sand or peat moss, or both mixed, and completely cover it so no soil comes in contact with it. If after several years, you find this bulb has multiplied to a large clump, they may be replanted with less care, since they have proved their ability to thrive in your soil.

I always buy freshly dug bulbs direct from a reliable lily grower. There are many bulb growers in Washington and Oregon. The monthly flower

magazines usually carry their ads. I do not advise purchasing Oriental imported bulbs as so often they are mosaic diseased and will perish after several years. Buy your bulbs from an American or Canadian grower.

In planting the lilies I place them at a depth of twice their greatest diameter. If you plant them a little too shallow the roots will pull the bulb down to its desired depth. If they are planted too deeply it is difficult for them to rise to their proper depth. Do not plant lilies near a wall or fence where reflected sun and heat beat upon them. They like sunny locations generally, where there is a normal movement of air around them. Be careful with fertilizer—do not use it in the soil when planting the bulbs. Lilies do not want a big stimulant of fertilizer at any time. Fresh manure is sure death to most of them. I find Vigoro very satisfactory, working it around the lilies in conservative amounts after they have gotten considerable growth in the Spring. I recommend a constant mulch of loose material around the base of the stems on the surface of the soil, to grow lilies at their best. The mulch retains surface moisture, retards weed growth and keeps the hot sun from over-heating surface capillary roots.

Lilies do not appreciate too frequent irrigation, likewise they resent thorough drying-out. They prefer a happy medium, that is a slightly moist condition of the soil at all times. If plenty of humus is used, as I have recommended, it acts as a sponge holding moisture, yet allowing adequate drainage. Bacterial action goes on always in moist soil and plant life depends so much for its food supply



Aurelius Hybrid Lily, Intermediate type. Photo by Herman V. Wall.

upon this bacteria. When the soil is dry this action is greatly retarded.

The proper time to plant lilies is in the fall. Most varieties prefer early October. There are several exceptions and one is Candidum, the Madonna Lily. It should be planted the last ten days of August and during the first ten days of September and should be placed almost at the surface of the soil. At this time it is dormant and this dormancy lasts for only a short period. Candidum begins growth and develops a rosette of green leaves by early October and continues to grow as long as the

ground is not frozen. It is said that a lily is always busy if the soil is not frozen. Lilies should never be planted in the Spring as these Spring offered bulbs have been lifted the previous September and October, then placed in cold storage for six months or more before you get them into your garden. Often they are limp and devitalized when you receive them. They usually do poorly and may die before they habituate themselves. Young and smaller bulbs usually do better than large and older bulbs.

If you are seriously interested in growing lilies I would suggest that



you purchase the book entitled "Success With Lilies" from Romaine B. Ware, Canby, Oregon. It is also given as a premium with a small order of lilies from him, otherwise costs \$1.00. There is a "New Book of Lilies" just off the press by Jan de Graaff, who is known as the most famous grower of lilies in the world today. The book sells for \$3.50 and is written in simple explanation of all lily requirements. At his seven hundred acres near Gresham, Oregon, Mr. de Graaff has produced commercially, entirely new strains of hybrid lilies, with many more to come as soon as reproduction is sufficient.

To mention some of the lilies which do well in Colorado, I am sure many of you are familiar with the Regal Lily, and the Centifolium, and their many new hybrids. Some are pure white, others white with golden throats. Some are pink tinted, others in light green shades. Both Regals and Centifoliums are of easy culture and no garden should be without them. They will thrive year after year and offer excellent cut flowers. There are other groups of hybrid lilies with about the same blood mixture, known as Princeps, Shelburne Hybrids, Crows Hybrids, Green Mountain Hybrids and superior Olympic Hybrids. Also Sargentiae crossed with Centifolium Hybrids. Many of these bloom after the Regals and Centifoliums have bloomed, and thereby prolong the season of the white trumpet and the type.

There are many new forms and types of the Umbellatum, sometimes called the "torch lily," some bloom-



Above: Lillium Pagoda is the direct offspring of a cross between the Tiger Lily and the Candlestick Lily. It is a new hybrid garden plant that is unusually vigorous and disease resistant. Stands about 4 feet tall with numerous flowers of an almost pinkish, deep-toned parchment shade. Below: Hollywood Hybrids. Photos by Herman V. Wall.

ing as early as the Iris and continuing in succession until late June, with colors ranging in tints of straw yellows through brilliant clear oranges, red and deep mahogany. Moonlight, Golden Fleece, W. N. Craig and Satan are some of the new ones. Scottiae and Elegans bloom along with the late varieties of Umbellatums, as do Willmottiae and Davidi, with their stems studded with blossoms, sometimes as many as thirty-five. All of this group mentioned are lilies of easy culture.

We are now getting close to July 1st in Denver and the Hollywood Hybrids are coming into full bloom. This is a new race produced by Jan de Graaff by crossing his Mid-Century Hybrids with the Prestonian Hybrids. They are large star-shaped lilies in pastel shades, light orange, yellow and deep reds. The plants possess a great degree of vigor and are impervious to early frosts.

The Mid-Century lilies start blooming at this time also. They include a wide range of stem heights, many color variations and scattered blooming periods. They do not require staking and are not fussy as to soil. The flowers are large and of heavy substance, and face outward from the stem unlike the Hollywood and Umbellatum which face upward. They bloom over a long period as there are some twenty different named varieties to date. Mr. de Graaff says there are more yet to come. Some varieties are early blooming while others start at later periods, thus extending the bloom into early August. Enchantment is the most popular variety to date. It is a nasturtium-red and possesses all the fine qualities which a lily could have. Parade, a fine yellow; Valencia, a pale orange, and Fire-King, a lacquered brown-red. All three are favorites. All these new Mid-Century hybrids are interesting subjects, are extremely vigorous and multiply fast. They are not



Above: Aurelius, "Sunburst". Below, "Meteor", a Hollywood Hybrid. Photos by Herman V. Wall. All pictures courtesy of Jan de Graaff.



susceptible to disease and can take late freezes, almost as well as a tulip.

Next to bloom are the beautiful Aurelian Hybrids. Originally they were a cross of Sargentiae, the paternal parent, on the common old Henryii. What wonderful variations come from this union. Later it was found that these Aurelians would readily cross with Sulphureum, Centifolium, and cross back on Henryii. Still greater variations came about. These beautiful lilies are classified into several groups, as their shapes are variable. Some are trumpet, some wide-open like a saucer, while others recurve their petals and sepals. These are the Sunburst, the Hearts-Desire, Golden Clarion (Golden Trumpet type) and the Green Dragon. Each is a variation in shape and color. A few of the Aurelians showing Sargentiae dominance grow bulbils against the stems at the base of each leaf, just as you have seen the bulbils growing on Tigrinum (Tiger Lily). This is a happy advantage as these bulbils readily grow and give you a host of fine lilies.

There is still another unusual strain of lilies that do fine in our Mile-high climate and these are called the Havemeyer Hybrids. They bloom after the Aurelians, so, complete an entire

summer of lilies in your garden. They come in colors very similar to the Aurelians—that is, Ivory, Cream, Fawn, Apricot and others to deep Orange. A few have light throats with dark-tipped petals and sepals. They are a very vigorous family and range in height from thirty inches to seven feet with as many as thirty flowers on a single stalk. Havemeyers brought into the house in bouquets will last over a long period. Both the Havemeyer and the previously mentioned Aurelians are practically insect and mosaic disease free.

All the foregoing mentioned lilies produce new off-spring called bulblets around the base of the stems at the surface of the soil, a few extending down the stem to the mother bulb. These can be carefully removed in October or early spring and replanted. A few will bloom the first season and all except tiny ones will bloom the second year.

As a final word—do not experiment with unknown varieties unless your purse is adequate. Avoid Auratum, Speciosum, Hansonii, true Sulphureum, true Sargentiae, Tigrinum and Formosanum. Mingled blood hybrids of these last mentioned are advisable since they are grown from seed and are considered mosaic disease free.

AMARYLLIS THAT BLOOM EVERY YEAR

By ELNA NICKELS

THERE is no secret to having amaryllis bulbs bloom year after year. Knowing a few fundamental facts about the amaryllis is all that is necessary. After the bulb blooms it must be kept in vigorous growth to produce the bud that will bloom the next year. When the plant has

obtained maximum growth it needs a period of ripening and resting. To obtain this growth the plants should receive regular feedings, judicious amounts of water, and plenty of sunlight.

For potting I use a rich mixture of one-third sand, one-third garden



loam, and one-third old cow manure. About every three weeks they are watered with a solution of some complete plant food, prepared as to directions on the package, or with liquid manure water. When danger of frost is past the actively growing plants are removed from the pots and planted in the garden. The large strap leaves will burn in the hot sun so should be shaded for a few days. The north side of a cherry tree has proven to be an ideal spot for them. The ground should be prepared in advance with a liberal spading in of manure and compost. Here the bulbs are happy all summer. They receive water as the other plants in the borders are watered. Amaryllis love moisture but will not tolerate water standing about the roots.

When frost threatens in the fall the bulbs are lifted intact. Leaves, bulbs, roots and all the soil that clings to the roots are placed in boxes on the floor of a fairly cool, semi-dark basement room.

For the next three or four months the amaryllis are not disturbed. When the new year comes they are inspected occasionally for signs of growth. By this time the leaves will be completely dry and may safely be removed. When the buds and new leaf growth shows the bulb is ready for potting, the bulbs are placed in pots that are only slightly larger in diameter than the bulbs. From one-

half to two-thirds of the bulb is above the soil level. The roots are handled as carefully as possible as good strong root growth is necessary for the production of future blooms. After a thorough watering, and a few days of subdued light the pots may be placed in a sunny window. Amaryllis are practically disease free, and have few pests, but give maximum bloom with minimum care.

GARDEN DON'TS

By REBECCA ENOS

Don't be a garden martyr. Nobody compels you to garden.

Don't complain if you haven't sense enough not to overdo.

Don't have too much garden to take care of.

Don't plant flowers that require wet feet, with those that don't.

Don't neglect mulching to conserve water and discourage weeds.

Don't put flowers that need sun, in the shade, and vice versa.

Don't get careless with sprays.

Don't bore people with your garden aches. They may have them, too.

Don't overdo early and fold up before fall.

Don't forget a garden is something to enjoy—not to crab about.

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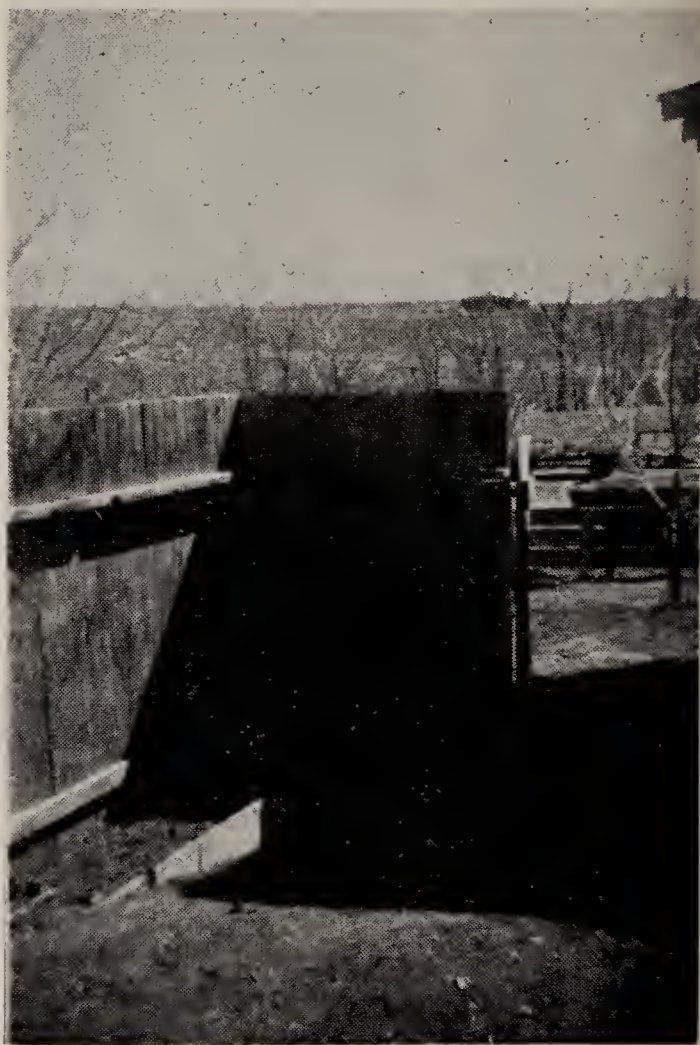
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FENCES FOR COUNTRY HOUSES

By LYNNETTE EMERY

EVERYONE remembers the old nursery story of the town mouse and the country mouse and how different some of their ways of living were. The same is true of country humans and city humans and among the differences are the uses to which they put their garden fences. And as a matter of fact fences in the country do serve quite a different purpose for the country dweller. Instead of being mainly for privacy from street and neighbor, they serve to mark a definite boundry between the house and its immediate surroundings and the wide open fields. They create a definite area to work within and what is inside the fence is, or is planned to be, fairly extensively gardened and cultivated. Fences in the country can be much more informal and are often unpainted to better blend with the landscape. Unusual materials can be used to great effect. For instance, we see on this page a "snake" fence made



Right: High board fence in the making to create a small intimate patio for a guest house on the Enos Farm. Left, Above: Old-fashioned hitching post and post and lantern joined by a tow chain to warn of a drop over the stone wall, garden of Mrs. R. Enos. Left, Below: Brick wall put up to create a light basket-weave effect. Built by the owner, Mrs. Lloyd Hughes.



of telephone poles that have been split four ways. A lot of work for the owner, but he can well afford to be very proud of the results. Others are built of old bricks put together to create a sort of basket effect. The lady of the house did all the work of this particular fence herself. Hats off to her! Someone else has put up an old hitching post and another post with a lantern on the top of it joined by a tow chain to keep people from falling off a wall. Both wood and masonry, either brick or stone, can be combined attractively, and for



Above: Modern suburban fences in the new area southeast of Denver. Right, Top: High fence attached to the house provides demarkation from the fields and a good shelter from the winds. Next below: Post and rail fence combined with brick posts give a solid, finished look to this entrance to the Ralph Burgess home. Next below: "Snake" fence made from split telephone poles at the home of the John Loughrans. Bottom: Post and rail fence to enclose a large area.

really large areas, the reliable post and rail fence, always good looking, can be put up relatively easily and economically.





BEAUTY IS GOOD BUSINESS

By MRS. O. M. HOLZE

A DRIVE south from Denver on South Santa Fe Drive, U.S. 85, will show a tremendous difference in the places with only a bare business frontage and those with some planned landscaping. We all know how miserably hot our summer sun beats down especially on pavement. A small amount of green—planting of trees or shrubs, grass and flowers, can make a place seem a great deal cooler and certainly more friendly.

Just before leaving town, the Robbins Incubator Company, a manufacturing plant, helps catch the eye with a planting of grass and specimen trees in front and on the sides, creating an outstanding effect both summer and winter.

Black Gold has a nice lawn in front of their appliance store and across Oxford Avenue an island planted with Pfitzer Junipers, and Petunias adds a decided note of color all summer long. This really makes a very effective front and one which can be maintained with a minimum of care.

The Silver Wing Inn which has a very large paved parking area has

handled their problem extremely well. On either side of the entrance to the restaurant, large raised flower boxes are planted with hybrid tea roses. The building shades the roses from the hot afternoon sun so that they thrive and are truly a beautiful and welcome sight.

The O & H Motel has quite an extensive planting in lawns, flowering shrubs and hedges, flower boxes and evergreens. Throughout the season there is always a lot of bloom and in the bleak winter months the evergreens are lovely and very effective. Flower beds in front of all the cottages are of real interest but the main attraction to the guests is an open lawn area bordered by flower beds. The chairs and cool grass invite relaxation and the fact that this area is in back of the main office and away from the noise and general hub-hub of the highway makes it a very popular spot indeed.

The Hawarth Veterinary Clinic also on Santa Fe Drive, has lovely evergreens and flower boxes. The evergreens are effective the year



around and provide a handsome background and contrast for flowers in the summer.

While the grounds of the Centennial Race Track are not visible from the highway, everyone who has attended the races knows what a great deal of pleasure the beautiful landscaping gives.

A small highway triangle at the entrance to the town of Littleton has been planted and is maintained by the Friendly Gardeners Club there. The Lions Club is cooperating with the highway department and is cleaning up the Lagoon which has been quite an eyesore for many years. A Standard filling station which serves Littleton has planted its "back yard" which "faces" the highway, with grass and shrubs showing great consideration for the passer-by. The Isaac Walton League planted and maintains two big highway triangles at the main intersection west of Littleton.

South of Littleton is the famous Country Kitchen, nationally known for its atmosphere as well as for its superior food. The lovely and extensive plantings of their grounds are a great attraction and always bring

pleasure and favorable comment from everyone.

The El Delno Motel has a lovely yard that is very well maintained. Further down the road the Littleton Nurseries has everything one could hope for in a nursery. Their landscaping around the home is really beautiful and the field of perennials next to the highway is a real thing of beauty.

I am in business and I can fully appreciate what good planting can mean not only to me and my fellow businessmen and women but also to the tourist and to local motorists. Plantings can be as simple or extensive as the owner cares to make them. Whichever they are, they provide relief from the monotony of paving and bare buildings and bring dividends in increased following and public favor. Many people will tell you that they find that the places that show a little extra thought and effort in the outside picture of the place of business show the same extra consideration for service and pleasure in other ways. There is no doubt about it and I wish this could be printed in bright red—*Beauty is Good Business!*



LITTLETON'S TRIANGLE

By MRS. HOWARD SCOWEN

HOW often have you driven into some small, or for that matter some large, town and thought, "If only it didn't look so drab and dreary!"; "Why don't the townspeople put out a more enticing 'welcome mat'?" Littleton was no exception, until, about three years ago, a small garden club was formed. This club decided that as one of their club projects they would attempt to improve the looks of an entrance to town and chose to plant the north triangle at the intersection of Santa Fe Drive and Prince Street.

Each spring different members of the Club get together to clean up the triangle and to prepare the ground for planting. Seeds are then sown and plants are set out. Last year one of the members and her husband donated a dozen lovely rose bushes. Another member gave and helped set out Petunia plants all around the outside of the triangle and Alyssum was put in as an edging. Zinnias were planted to add their bright color to this picture. I might say that the Club has been urging the planting of Zinnias and Petunias for every home in Littleton.

Throughout the summer various members take their own garden hose and tools and spend the time necessary to water and cultivate the plants. Their efforts are repaid many times over and the women of the Club, "The Friendly Gardeners" feel that their time and work on this little triangle helps to make the closing lines of their collection—"to make our homes and cities joyous places in which to live"—real and true for each and every member.

It is our hope that this little triangle will add a bit of pleasure to the many people who pass through

Littleton—those who live near by as well as those who are on their way to the many interesting and beautiful spots in the great state of Colorado.

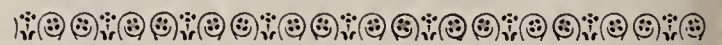
HORSE CHESTNUTS

By S. R. DEBOER

A recent count of existing varieties in the new Botanic Garden, around the Museum in City Park, Denver, reveals the astonishing fact that there are not less than 66 kinds of trees, big and small, growing in the area. That is without counting the new varieties planted this spring.

A stroll through the Botanic Garden will be a revelation to tree lovers. You will find there such trees, unusual for Denver, as the Ginkgo, Tulip Poplars, a Golden Chain tree (Laburnum), Golden Rain or Varnish trees (Koeberlinia), a Yew, some six varieties of Oaks including a shrub Oak, possibly the Harvard Oak, Tca's Weeping Mulberry, as well as the regular Mulberry, Kentucky Coffee trees, Black Walnuts and a Butternut, and to show my ignorance a Scotch Pine, which is not Scotch.

In front of the Museum steps are two European Horse Chestnuts, full grown trees and perhaps the finest in the Denver region. They are the



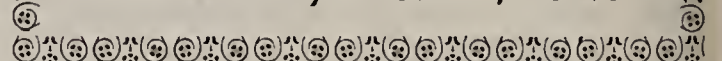
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remnants of two long lines of trees planted at one time. The picture shows one with a double trunk, mute witness of a struggle for survival. The history of the tree is very likely that it froze to the ground the first winter and came back with two trunks. It is rather a trying way to grow imported trees, but after the first shock of our climate many recover and the multiple trunk is often an advantage to the tree.

These two trees are mature enough to produce chestnuts which in turn should give us young trees which have the hardiness of the parent in them.



WILD MUSHROOMS OF THE SPRING

By LESLIE F. PAULL

FOR several years I have been consulted about the edibility of Wild Mushrooms. These are commonly brought to me in late summer or early fall. Too often the very poisonous *Amanitas* come in. However, at that season, species that are normally edible are infested with maggots of the mushroom fly and so rendered inedible. I have never found maggots in the early species, and I have reason to believe that there has not been enough of temperature averaging 65 degrees to activate the flies. Maintenance of this temperature or lower furnishes complete control in commercial houses.

To mushroom lovers I recommend that they watch out for two excellent species fairly common in the Denver area, sometimes in May but more often in June. Both are gill fungi.

1. The "Shiny Cap" (*Coprinus micaceus*). Search first for a decayed or decaying stump, around which they may be found so densely crowded together as to press each other out of shape, except at the perimeter. They are rather small compared with most mushrooms, but make up for it by "mass production." A handful

may have 25 or 30 in assorted sizes. The color is a clear buff, sparkling in sunlight with tiny sequins, as though sprinkled with mica flakes, whence its name. Notable also is the steep pitch of its roof, an inverted cone. The stems are slender and white.

2. The "Inky Cap" (*Coprinus atrimentarius*). Though closely related to the preceding, and having the same steep pitch of roof, there are notable differences. They are two or three times as large with much fleshier caps and stems. They grow singly and scattered, often in lawns, when these are not too closely clipped. The color might be called "battleship gray." There are no shiny particles on the roof.

The above descriptions relate to them only at their prime. First indication of age is blackening of the gills. Then suddenly they melt away into the color and consistency of shoe-blackening, and who wants to eat that? They might be called "self-warning" mushrooms.

Another spring mushroom, the delicious *Morelle*, is found in swamps in some parts of Colorado, but very rare in this region.

MY WILD GEESE

By MARJORIE PERRY

I FIRST got close to wild geese in a little game refuge and was fascinated by their stalking dignity. Of course, I came home with a pair when I found that the man sold them. Their wings were clipped so they couldn't fly and they did not try to leave. Being used to people, they soon joined the chickens for feed and sat around the barnyard. The lake was frozen over so they could not swim, but they kept aloof from the tame geese and seemed satisfied by themselves. One day I heard the persistent call of one and found that he was alone—something had killed his mate. They say that geese mate for life, but I quickly supplied a new partner and he was content. The next time that tragedy hit, I happened to be at hand and saw that it was my airedale, so I tried once more and shut them up until the lake was open. In vain, I tried to tame them, but was allowed only to feed them and keep my distance of several feet. And that turned out to be a lasting situation after years of contact.

As spring came, the stately pair ambled farther into the meadow, always returning at night, and when the leaves began to come out, they picked a grassy spot on the edge of the lake and the Duke and Duchess set up housekeeping. He never left her except to swim back and forth around the point every once in a while. I was a bit disappointed when she came off the nest one day with one lone gosling. They set sail with the baby between them and so he grew up, all three together.

The next spring Duchess went to the same place, but when she had finished laying her eggs and settled down to stay, the family life changed. Duke drove his child away with vi-

cious flapping and noises. The poor young goose was very unhappy and kept trying to come back at first, but finally he slowly wandered over the dam and down through a slough to the lake quite a long way below. There he found eight beautiful ducks without a drake. Our young aristocrat had never looked at a duck on my lake but he went right into their midst and began to strut around. He honked and they quacked and circled about him in a truly feminine way. He went out on the bank and called them. They followed quickly and all settled in the sun. Suddenly he rose and slipped into the water. They watched in silence till he called them in sharply—dashing up on the bank and into the water again. When they finally understood, they meekly followed. He had found friends and was very happy for days in his superior position. But one day he quietly paddled up the slough, over the dam and into the pond, making straight for his mother's point. Duke flew at him viciously and Duchess watched in silence. There was other life floating near the pond but it took no part in the battle. Our little outcast soon gave up and retraced his way back over the dam without a backward glance. His ducks were awaiting him—there was great rejoicing. He led them out of the water to a haystack in the middle of the field. It was farther than they wanted to go but he kept at them and insisted till they reached the loose hay and then all took a nap. Two hours later he led them back. That was a daily trip thereafter and to my knowledge, he never tried to see his mother again until, by some uncanny instinct, he went up on the day that she proudly floated into the lake with five little



yellow goslings. He was met half way from the dam, by the whole family and took his old place among them. Fickle one—he never returned to the waiting ducks!

That fall, the young ones flew over the meadows and around the lake but soon returned to the Duke and Duchess who could not fly—eight together as they grazed, often close to my house, and enjoyed corn with the chickens. The next spring our lone boy had playmates and there were several nests, so we soon had 20 in our flock. Each family made a close unit but was never out of sight of the others. Just at dark they came, single file, toward the lake and glided into the water—the babies between their parents. When all were in, they whirled and splashed in a beautiful group. A vicious crane saw this and stood for an hour on a point, awaiting his chance to kill the little ones. He had killed two before we found

him and then it was an easy matter to get him as he waited, hidden on the bank. Later his mate came and tried the same game but the geese sounded the alarm and we ran to the rescue. The 18 had a very happy summer and by fall were flying farther. They'd leave at dawn, returning just after seven o'clock, honking their merry way right over the house—a perfect alarm clock. One day I counted 19—some lone soul had found a family and he never left. These birds had only one fault—they paid no attention to other birds or animals or people except in the spring when the ducks went into the water with their tiny ones. I wonder why they killed those little things with one brutal peck before the duck could scatter them and fly at the gander. One at a time was all he could get. If I could shut the duck up when she first hatched, for two weeks, the danger was passed, for

they were ignored after that. Perhaps they were jealous on account of their own babies.

All went well through the winter 'til one day there was trouble. They honked and called for hours all over the place and finally strung out on the ditch bank where I could count them—only 18. I helped them hunt for this was a rescue party, well organized—but in vain. They didn't give up for one minute and late in the afternoon we all heard a faint distant call. I ran to a high window and the 18 geese, silenced for the moment, started toward the sound. The call came closer and they moved faster across the prairie. From my post I could see half a mile and soon I saw the lone bird walking and flying low, straight toward us. The flock did the same, never going into the air, and calling louder as they grew sure of the answering call of their missing pal. They met in the open, circling round him and chattering in a most human way. Would that I could talk their language and know his tale but they were satisfied—suddenly turned around, stalked silently back and uttered not another sound that day.

A small pile of snap corn kept them happy all winter and life went on, with 37 the next year and 80 the next. Then came real tragedy. A new neighbor brought three hunting dogs and began to train them on the lower end of the lake where the ducks had been. There was shooting at all hours—not at the geese, but close to them. The wandering dogs broke up the nest on the point, three times, 'til the goose gave up. That summer they found other lakes for the night and stopped flying over the house. But in the spring a small group came back to the old nesting spots. We had 19 setting and they stayed until the babies could fly. The Duke and

Duchess were gone, probably stolen, for we had rescued them several times from boys who thought they were very smart to catch a goose. We had enjoyed them for seven years, in spite of some molesting neighbors who insisted on shooting them even in my own pastures. We mourned their loss and were most excited when they flew past in happy honking groups. They were interesting—their personality and habits could be copied to advantage by humans. Self-supporting, without harming anything, they enjoyed our food as a luxury; content at home, except for their daily exercise, which they took all together, happily honking as they soared along against the sky. They needed no care nor shelter at any time, loving the storm as well as the sun. Windy days sent them soaring high as if in competition with the gale and yet they always came back to the less fortunate, who could not travel. They never left their young, never quarreled, were unafraid and independent. We missed their gracious, graceful company.

Again the spring has come and with it the merry clatter of a busy gathering, glad to get back home. Mating finally settled, only small groups fly about. Pairs walk sedately in the meadows and all the points are occupied with a lone gander on guard. From daylight to sunrise, the lake echoes with the social hour of clatter which stops as suddenly as it begins and they wander to feed quietly on the tender greens of spring. I'm hoping, to once more, keep my wild treasures, by guarding their haven. With the neighbor's cooperation, that can be accomplished. I have sacrificed the freedom of one gay creature by cutting its wing, in hopes that she will keep the new flock for me to cherish once again—all the year around.

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Mr. George R. Shook, 725 Emporia St.,
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Mrs. Robert G. Boyd, 4125 Quay St.,
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Mrs. Arthur J. O'Brien, 8530 Grandview
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St., Craig
Mrs. Myrna Boyd Williams, 1027 Cleve-
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Mrs. Tom Cooper, 1336 Sheridan, Denver
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Mable E. Dailey, 950 Clarkson, Apt. 23,
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Mrs. Frank L. Riley, 1330 Josephine St.,
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Mr. Kenneth Smith, 1357 Humboldt St.,
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Above: The endless prairie as it is usually seen. Below: With a windbreak planting conditions are modified so that other ornamental plants may survive.

DRY LAND GARDENING

An Eastern Arapahoe County Farmer's Wife

GARDENING on the plains with little or no irrigation can be accomplished and, fairly effectively, if certain rules are followed.

The first thing that must be done is to dismiss completely from your mind any idea that you can have a lush green oasis such as can be achieved in a well irrigated area. The only time you may have a nice green effect is in the springtime if there has been enough moisture during the winter. If you do have a bit of green then, enjoy it thoroughly while it lasts, for the rest of the season gets dryer and dryer and you have to depend on other things to give you any sort of garden pleasure.

When we first moved here we had just enough water for drinking purposes and for the few animals we had, certainly not enough for any sort of irrigating of flowers and such pretty things. So, I decided that the best thing for me to do was to look around and see what was growing

by the roadsides. If I liked what I saw I dug it up and brought it into the garden. I found quite a few wild asters that I transplanted and they are doing just fine and are very pretty. I also gathered some yucca seeds or dug up some very small yucca plants and brought them home with me. Yuccas are funny, stiff looking things, but the flowers are really pretty and as they love the dryness they do very well.

In the early part of the season I have lots of lovely iris. They are all just the common hardy kinds that need no care except to divide them once in a while when they get too thick. I've also got lots and lots of the common lilacs and quite a few of the Hugo and Austrian Copper roses. None of these have ever been watered and they all do just fine. I also have a couple of some kind of wild plum tree that does well. On my back porch I have a fine silver-fleece vine that provides shade for





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the porch and is covered with flowers most of the summer in spite of no watering and hot dry winds. The common oriental poppy does well for me—almost too well—for it spreads faster than I can keep up with it. The same with hollyhocks, but I don't care because they are so nice and colorful later in the season when everything else is so drab.

Because we live on the plains, windbreaks are very important to us. These not only shelter the house from the winds but also give a little shade in the garden and a real feeling of intimacy, as compared with the way we felt when we first built the house, and there was no windbreak and nothing but miles and miles of barren prairie in every direction. We first bought our trees as little seedlings and set them out in rows and from then on they had to fend for themselves. They have done very well, we think, and while not the specimen trees you'd find in irrigated areas, we love them and are proud of them, both for their looks and for the great help they are in shielding us from the winds. In the windbreak we planted some Pines, Russianolives, Boxelders, Honeylocusts and Chinese Elms. At the same time we planted the windbreak we also set out dozens of Lilacs. Most of them we bought, the rest we begged. Quite a few went into the windbreak—the others, we planted near the house and other buildings. When the Lilacs are in bloom, I think ours is as lovely a

Arapahoe County home of the T. J. Weddell's with a good start of hardy ornamental plants.



place as you can find anywhere.

More recently, I have added a few more shrubs like Snowball bushes, Honeysuckles, Mockoranges, some Snowberries and even a Flowering Quince. The Flowering Quince is awfully slow even for the plains and does take a little more nursing along than the others do. But it's worth the extra effort and the others do just fine with almost no care at all.

I do have a very small area near the house, where we sit out, that I can water pretty well, most years. There's a little bit of grass there that I can keep looking fairly well most of the summer. Around the edge I have a lovely hedge of Spiraea and in front of that are all the flower beds that I have. The beds are planted with only the hardiest annuals and perennials and the ones that are most effective through the summer and early fall. I stick to pretty much the same things each year: Pansies, Petunias, Larkspur, Snapdragons, Zinnias and Calendulas for the annuals; Blue Sage, Candytuft, Shasta Daisies, and lots of different Chrysanthemums for perennials. I've also got a few herbs by the kitchen door.

Gardening on the plains takes patience and willpower. Patience because naturally, with no irrigating, things grow much slower than where they would if they could be watered regularly. So you just have to wait longer than other people. And it takes a lot of willpower, for me any way, to resist the temptation to water "just a little." Just dampening the ground around plants may make you feel good but it really does more harm than good so it's better not to water at all unless you can do it really thoroughly. But my garden, simple though it may be, gives us lots of pleasure, and while it may not seem like a garden to lots of people it is a real fine one to us.

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GARDENING IN JUNE

EARLY in this month the annuals that have been raised indoors should be set out. The weather should be warm and settled from here on. All the woody plants should have been in weeks ago and showing leaves now. More and more nurseries are extending the season by growing roses, perennials and sometimes even shrubs in pots so that they may be set out later in the season with no set-back. If you still need a few plants inquire of your nurseryman to see if any are still available.

For the benefit of the new gardeners we should repeat this warning to leave all the leaves on tulips and other bulbs until they are completely ripened. It is only through these leaves that a new bulb is formed to bloom next year. Plant annuals among the tulips to hide these ripening leaves.

As shrubs complete blooming is the best time to do the necessary pruning. Old overgrown shrubs may have some of the old stems taken out down to the ground. Within a few years a shrub may be completely renewed by this method and little bloom will be lost in the meantime. Do not clip all the twigs from the base of a shrub or clip the top uniformly if you want a naturally shaped shrub that will be full of bloom next year.

As few of the naturally dwarf evergreens grow here successfully, every gardener should learn how to shear or pinch evergreens to make them stay small and become more dense. In general it is best to cut or pinch only the current season's growth, which indicates that this process should be practiced every year and before the trees get too large. Junipers may be sheared several times during the growing season and pine should be pinched back when the "candles" appear in spring.

Weeds, we always have with us and cultivation will probably always be needed to a certain extent. We should learn other methods of controlling weeds, such as mulching, and spray with chemicals. When cultivation is necessary it should be only deep enough to control the weeds and not interfere with the roots.

One of the garden practices which is "different" here is shading. Many of the nice plants that we bring in from older areas can not tolerate our hot sun and dry air. If they are given at least partial shade for a few years they may become accustomed to conditions here and give good results. Lath frames, burlap or, in the case of tender-barked trees, wrapping may mean the difference between success or failure.

Every gardener should learn the advantages and disadvantages of the various fertilizers offered. They each have a use and purpose. It is most important to work much organic material into the soil before planting anything. After lawn, trees or other plants are in the ground and they appear to need more food it will be most effective to use the more soluble chemical fertilizers which may leach into the soil. Often a mulch of organic material will serve both as a ground cover and will gradually leach into the soil the necessary chemical elements. The most important element (for us) in chemical fertilizers is the Nitrogen (the first one mentioned in the required listing of the three elements in every fertilizer). If you want full value for your fertilizer dollar figure what you are paying for each pound of nitrogen in the fertilizer you buy. We need only a little phosphorus and usually no potash, so it is the pounds of nitrogen per hundred that we are paying for.

If lawns were properly watered and mulched and fertilized during April and May they should be vigorous and dense now so that there is no vacant space for crabgrass and weeds to get started. Continue to water thoroughly when you do water and only water when it is needed. The frequency of watering will depend on soil, exposure, season and weather so try to avoid watering by schedule. If you do not know how effective your watering is, dig in occasionally and see how moist the soil is and how deep the water has penetrated. Wherever possible mow rather high (1½ to 2 inches) and leave the clippings fall. New bluegrass lawns may look a little weak this month and might be benefitted with a light application of a fertilizer containing nitrogen.

The proper application of water is the thing that makes it possible to grow plants here where we have naturally almost desert conditions. Learn to test out your soil and see how much water it takes to keep the soil moist down where the roots are. Learn to water thoroughly whenever it is needed and not keep the surface soggy and resistant to the entrance of air by too frequent waterings. Tests have shown that watering can be much more effective when done in the early morning. Less evaporates and it seems to soak in better. Getting up early in the morning will benefit the gardener as well as the garden.

As the plants begin to grow vigorously in June the bugs and other pests also appear and try to fill their place in the balance of Nature. Since man has already seriously disrupted this balance he must continue to give artificial control to the pests that threaten to destroy all the plants that he tries to raise for food or ornament. Plants grown in soil which has been properly prepared before planting and which have been properly watered will be more resistant to pests, but often weather or other conditions will produce great quantities of some bug which threaten to wipe out the results of our garden work. Every gardener should learn the principal types of insect and the usual remedies, but the exact treatment for specific troubles may be the job of an expert. New insecticides, miticides and fungicides are continually being introduced. It is well to consider these in an experimental way until they have proven themselves. Nicotine sulphate (Blackleaf 40), pyrethrum, and rotenone are still effective treatments for aphids (the soft-bodied sucking insects) though there are several new products that will also kill some of them. DDT is still very effective for most chewing insects (beetles and worms) as it usually has a residual effect making it unnecessary to actually hit all of them. Preparations containing lindane are becoming more and more useful as this product will control some pests otherwise rather hard to kill. Our greatest problem continues to be the spidermites. New insecticides like Parathion are effective but too dangerous for home gardeners to use, and the old remedies like sulphur are not always entirely effective. The new product Malathion seems to offer much in that it is very effective in killing mites but relatively harmless to animals. Used with vapitone or ovatron it has given very good control. In warm weather look for spider damage on evergreens and many other plants. Chlordane continues to be the most effective control of ants and grasshoppers. It is also now being used to kill crabgrass seed. Use these new, powerful preparations with caution and only when needed and as directed, for they may also kill many beneficial insects if used improperly.

LOOK AND LEARN GARDEN VISIT

By VAHNA BROMAN

AN ARRAY of June brilliance will welcome you at the second Look and Learn Garden Visit to be held on June 17. These gardens are all located in Englewood and Littleton. Whatever size your garden may be, or how large or small your problem, you are sure to find many helpful solutions here in these gardens.

The J. V. Petersens, at 3265 S. Bannock, have created a masterpiece with their new sloping yard that has taken a great deal of original planning and work. The Espalier Crab and white petunias against the red brick at the front of the house will be sure to catch your eye. The effective solutions to the slopes at both the north and south sides of the house is unusual. Both the rock garden on the north and the miniature roses covering the steps on the south will provide many helpful hints to problems you may have. The careful treatment of the trees and shrubs at the back provide cover for unsightly alley problems without obstructing the view. The flower box effect of the beds along the north side, bordered with a clipped hedge of lavender cotton is most effective. This is truly a garden of unusual design, careful planning, and hard work.

Placed effectively at a height to capture the full view of the mountain range is the N. C. Ball home at 750 Lake Street in Littleton. The roses along the front fence of the yard and the carefully planned shrubs and trees frame this home with unusual beauty. As you enter the back yard through iron gates to the covered patio you will realize the satisfying completeness of this masterpiece. You will enjoy the hedge encircling the patio, the rose beds at the foot of the trees at the west, and the unobstructed

view of the glorious mountain range. This is a home and garden that has taken the touch of the artist to give it its beauty.

The lamps at the gates and the birdhouses scattered generously throughout the yard of the W. F. Downs home at 157 Ridge Road in Littleton bids you welcome. An interesting ground cover of myrtle beneath the trees might be an answer you've been looking for. The formal pool in the garden in front of the unusual greenhouse presents a bit of heaven to this unusual spot. Strutting white pigeons and many other kinds of birds in the spacious yard are companions to the birds inside the tropical greenhouse. This greenhouse, complete with pool, fireplace and unusual flowers and plants provides a resting place for anyone who visits it. At the west of the house is another garden of equal beauty. Two upright juniper at the ends of a pool leading from the house frames a perfect view of the mountains. The low evergreen planting around this garden gives it a completeness and prevents any obstruction of this view all may enjoy.

The Paul Spencer home at 4600 S. Lafayette in Englewood is a home of beauty and a place where children and adults alike can and do enjoy the fullness of complete living. From the welcome lamps at the front of the garage as you enter to the restful pool beneath the sloping rock garden you will look and learn much. The colorful beds of flowers that wind around and underneath the trees at this home will surely be of invaluable help to you in your future planning. The amazing greenhouse filled with all kinds of flowers you have wanted to raise will be a place

you will spend many moments of restful enjoyment.

If your yard is unusually large you will be especially interested in the gardens at the home of Dr. and Mrs. C. S. Bluemel at 4501 S. Franklin. The elaborate pool in the front yard framed with beds of multi-colored flowers with a background of evergreens will be sure to catch your eye. You will also enjoy the gazing globe in the front of the large bed of roses at the back of this garden. Several unusual flower beds here will be of help even to owners of small gardens. The dwarf dahlias under the shade of a massive tree and outlined with a criss cross of red and white petunias is something not soon to be forgotten. You will also see beds of red geraniums, tuberous begonias, wax begonias and California poppies. As you walk across the bridge spanning the little stream at the west don't miss the framed view of the mountains through the arbor gates. This garden will take a great deal of looking to learn from it all possible.

The spaciousness of the Lemoine Bechtold home at 4201 S. University

in Englewood is breathtaking. As you drive past the bank of stately evergreens at the front of the yard, you will be impressed at once with the lake and the greens of the country club grounds at the foot of the sloping gardens of this home. You may agree with the children of this family when they say, "All that green grass to enjoy and none of it to cut." With all the views of the homes on this tour, this may well be the most wonderful. The white rocks around the top of the sloping rock garden leading away from the yard in back makes a perfect frame for the flower garden below. If you had your wish I feel sure you would ask for nothing more than to sit for hours on the porch at the back and breathe in the beauty. The tuberous begonias at the side of the porch, the brilliant bed of red geraniums, and the well planted trees on the north slope leading to the greenhouse are but a few of the things you will learn from at this garden.

Don't miss this second garden visit, because it has many spots that might be just the answer you've been looking for.

Picture on back cover of the Arapahoe glacier and peaks, Silver Lake in foreground. Photo by Snow of Boulder.

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The Green Thumb

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JULY, 1953

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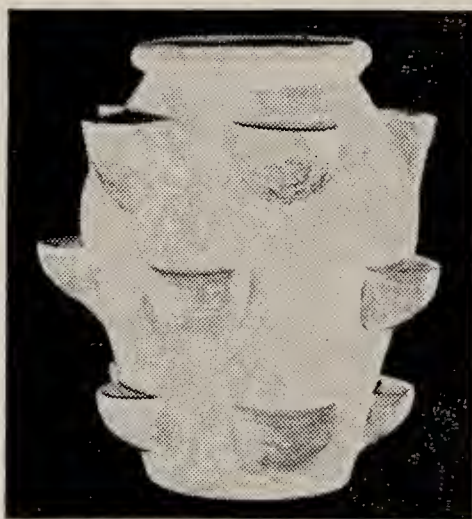
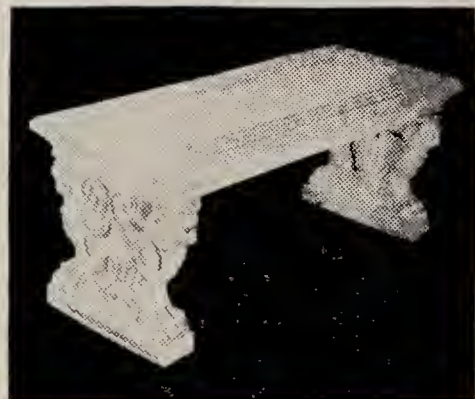
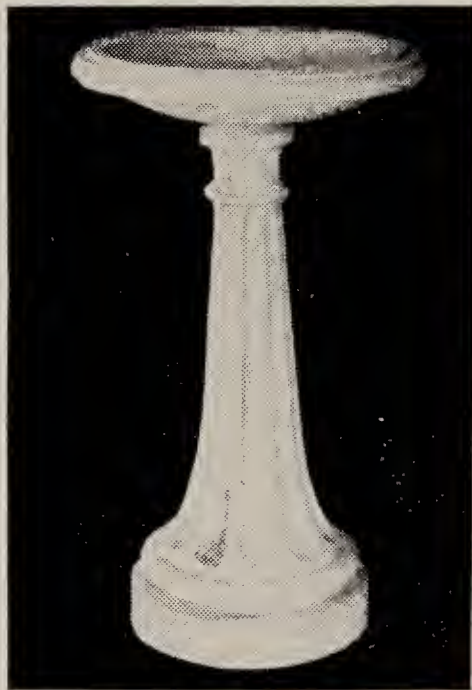
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JULY SCHEDULE

- July 2, 3, 4, Friday, Saturday, Sunday. Bowen Mountain in vicinity of Grand Lake. Camp west side of Berthoud Pass five or six miles north of Grand Lake.
- July 12, Sunday. Boreas Pass. Over Kenosha Pass, west of Como. Wild flowers in abundance. Leader, Lilah Lampe.
- July 15, Wednesday, 9:30 to 5, Garden Tour, see story. Get tickets at Horticulture House or any of the gardens.
- July 18, 19, Saturday, Sunday. Slovonia and over pass to Gilpin Lake and Gold Creek. See Routt County map.
- July 25, 26, Saturday, Sunday. Pawnee Pass to Pawnee Lake. Lindbergh Peak may be climbed from here. Leader, Marg. Shepherd.
- August 2, Sunday, Colorado Day. Herman Gulch and climb of Hagar Mountain. Good Columbine country. Leader, Anna Timm.
- August 8, 9, Saturday, Sunday. Corona Pass. Camp at Power House lake. Register several days in advance for all trips so that food and transportation can be arranged. Call TA 3410 or PE 5565. No indoor meetings in July.

Find a gardener and you have found one who knows where to dig for happiness.—Anon.

PRACTICE WHAT YOU PREACH

You believe in gardening; that it is very much worthwhile. You also believe that gardening in this area is different.

This Association and this magazine is devoted to promoting these two things; the importance of gardening and the best methods of handling the differences in plant material and garden practices to make gardening effective here. Information is collected from the experience of the best gardeners and made available to you. Should not more of your friends benefit from these things? Tell them about the Association, the Library and the Green Thumb.

SPECIAL COUNTY ISSUES

How do you like the special county issues of the Green Thumb? We think that Jefferson and Arapahoe Counties did a fine job and helped to encourage better gardens in their areas.

The August issue will be given to gardens and gardeners of Larimer County, September to Otero County, October to Boulder County and November to El Paso County. If you know of good gardens in these counties or those who can write of gardening will you let us know so that we may arrange to include them in the proper issue.

SOIL AND THE MICROBE

By THOMAS L. MARTIN

Provo, Utah

ONE writer has said, "Fill a flower pot with soil, plant into it some seeds, nurture it, moisten it, and keep it warm. Allow the sunlight to shine upon it and soon those tiny seeds will unfold into a number of beautiful plants. Indeed a miracle will spring from the sod."

Something does indeed happen in the body of this soil which challenges the imagination of man. The soil mass is quite a mystery. An attempt to understand it and know the activities that go on in its depths constitutes a most interesting study.

This soil owes its origin to many physical and chemical forces which have been at work on the rocks and minerals of the earth. Mountains have been acted upon by these chemical and physical forces until they have softened the surface enough to have pieces pulled from the body of the rocks by gravity and other agencies until they have fallen into the mountain streams there to be broken down farther, then carried by the water to the mouth of the canyon and spread out into the valleys below. Oceans, winds, glaciers, volcanoes and rivers have contributed, too, to the creation of the vast bodies of soil materials.

After the geological forces have done their work, organic matter of various kinds accumulate at the surface of this soil mass. Bird droppings, bacteria, algae, and fungi have contributed much. Earthworms and roots have helped to put this organic matter into the subsurface. When thoroughly mixed with soil material and decomposition has gone on for some time, the soil mass becomes the body in which these plant growth miracles can occur.

To better understand what does

happen when the soil is capable of growing a plant, one might imagine a cubic foot of soil enlarged to the size of a city block. Then one can readily see the workings of this wonderful piece of nature.

There is to be seen many soil particles of various colors snugly nestled close to each others' surface. Water passes through the pore spaces in response to many physical forces. Clumps of sticky substances or colloids made up of small clay particles and some slightly decomposed organic matter, cling to each soil unit. Partially decomposed pieces of organic matter are intermixed with these soil particles. Plant roots appear unusually large with many root-hair projections attached to the roots. These roots and root-hairs are surrounded by great numbers of soil particles of varying sizes. By-products of bacterial decomposition and other soluble materials flow into the growing plant roots, thence to different parts of the plant where they are assimilated within the plant body. Many microbes are found bunched together in various parts of the soil mass steadily employed making the soil a plant producing agency.

These microbes are very vigorous workers in this scene,—four billion of them in every pound. They are vigorously working, tearing apart the organic matter, liberating plant foods, and furnishing gases which create a favorable home for themselves.

Molds

There are many different kinds and groups of organisms engaged in this earthy home. There are the soil molds, a cottony, loose growing, thread-like organism that entwines itself around the soil particles and makes that soil

mellow and easy to work. They are so numerous in a garden soil that one may find as many as 50,000 molds per gram. In an orchard soil, a common number is 250,000. A forest soil may contain 100,000 per gram. These molds bring about a partial decomposition of the organic matter and change the fresh organic matter into a slimy mass, a sticky sort of substance which tends to make the soil assume a crumbly condition. In the decomposition of the protein part of organic matter, these organisms liberate vast amounts of ammonia, a very essential element for plant and bacterial growth. These molds do develop a great many substances which are called antibiotics and which cause death to many objectionable organisms. It is believed that these antibiotics neutralize the activities of disease organisms in the soil. It is a fact that there is less disease in soils well charged with decomposing organic matter. While the molds are decomposing this organic matter, they build up many substances which make other forms of soil life much more effective. Many of these soil molds produce the antibiotic penicillin, well known in recent years for its ability to combat a number of human diseases. There are also antibiotics called streptomycin and aureomycin and chloromycetin and many others that have been isolated from soil molds. There are many activities which have not been completely investigated regarding the action of these molds. Suffice it to say they are a most important source of life in the soil mass about which we are interested.

Algae

There are many small green bodies which we call algae. They are green bodies which appear on the surface of a moist soil and gives to the soil a greenish tinge. There may be as many as one million of these algae per gram

of soil. They are capable of manufacturing their own starch. This starch becomes a source of energy for bacteria. They are not only found at the surface but also deeper in the soil probably functioning as bacteria function. When these algae do their work in the presence of sunlight, oxygen is liberated which creates a favorable gaseous environment for many other organisms. This oxygen aerates the soil and contributes much to the control of some plant diseases. They are a source of energy for the bacteria that fix nitrogen in the soil. They aid in the decomposition of rocks and minerals already a part of the soil. There are many ideas yet to be developed in the relationship to the part that algae play in soil economy.

Bacteria

There are many bacteria in the soil too. Fifteen million per gram of soil is a common number. These bacteria carry the decomposition of organic matter to completion. The bacteria are of many kinds and are named according to the part they play. One group decomposes cellulose, another decomposes the protein material, a third causes the liberation of ammonia from the proteins, still another group attacks the ammonia and causes the development of nitrates — a simple form of nitrogen. There is still another group which attacks the nitrites and changes them to nitrates. All of these activities are essential to plant growth. This changing of protein to ammonia is known as the ammonification process. The changing of ammonia to nitrates is called the nitrification process. When manures are applied, these two activities become an essential part of manure decomposition. When manure is added that is low in nitrogen, such as straw, nitrogen fertilizer must be added too, otherwise decomposition will be arrested. The small amount of nitrogen in the

straw is slowly liberated and the bacteria make first demand upon it thus causing the plants to die of nitrogen starvation.

It is an interesting experiment to take a four-inch cube of soil and run a stream of water through it and see the kinds of life which can be seen with the naked eye. There are nematodes, perhaps thousands of centipedes, and many thousands of insects. The part they play is not known, but undoubtedly, they do something to make the soil live.

Earthworms

The earthworm is found too in this four-inch cube of soil. They may be present at the rate of one million per acre. They tend to cause soil to aggregate. In one year they may bring to the surface of the soil as much as .7 of an inch of worked-over soil material. The pores made create a better exchange of air between the soil and the atmosphere which, by the way, is a good thing for heavy clay soils.

These earthworms drag leaves into the earth along with grass cuttings and other vegetable matter. They have been known to drag material to a depth of 8 inches and mix it and blend it with the soil. Eighteen tons of dirt per acre will pass through the earthworms bodies in one year. These castings contain a liberal supply of phosphorus, and potash.

The earthworm pulls itself along by contracting two kinds of muscles. As it goes along, it forms a burrow. The earthworm will compete with the other organisms for the organic matter in the soil. They grow because they use the organic fertility that is there. The more organic material the greater will be the number of earthworms. A great many people think that these worms will furnish fertility to the soil, but that is not so. Wherever the earth is fertile, particularly with organic matter fertility,

there will be found many earthworms.

Earthworms are often grown commercially and are fed on coffee grounds, manure, corn meal, and grass clippings. The richer the organic matter, the more rapidly the earthworms grow.

Hormones

When these soil organisms decompose the organic matter, a number of growth promoting substances such as hormones are released. They are absorbed by the growing plant. Of course, plants can grow their own hormones, but if many accumulate in the vicinity of the decomposing matter, more will be absorbed by the growing plants. Dr. Peltier of the University of Nebraska worked with common wheat bran. He added certain molds and studied the influence of the development of vitamin B. complex particularly riboflavin. He found that within three weeks, this bran contained 30 times more riboflavin than it had at the start of the experiment. There are other growth promoting substances which develop and contribute much to the health of the soil.

These various forms of soil life and their activities described are a very important part of the soil picture. It is difficult to get crops to grow without these activities. They furnish suitable gas, moisture, air, temperature, plant foods, all of which are very essential for plant growth. When we farm a soil, we must farm these organisms. There is no substitute for microbial activity. The soil cannot function without these helpful workers so we must provide for them. To do it, we must give much organic matter to these soil organisms. The more we can have the plant develop a large root system, the greater will be the organic matter in the soil from the residues of these roots. Crops differ in the amount of organic mat-

ter they leave in the soil. Note that oats furnish through their roots about 3,800 pounds per acre; wheat will give about 3,800 pounds; rye, 2,800 pounds; barley, 4,300 pounds; red clover, 8,000 pounds; and alfalfa, 10,000 pounds per acre of root materials. One will get much more activity in an alfalfa soil than in a grain crop soil because of this greater amount of available organic matter.

These bacteria must have a good supply of plant foods. Organic matter will furnish some of it. Ten tons of manure will contain in its tissues 100 pounds of nitrogen, 120 pounds of potash, and 50 pounds of phosphorus. This is equivalent to 1,100 pounds of mixed fertilizer. These bacteria must have a good supply of carbon dioxide gas. For every 45 pounds of nitrogen, 13 pounds of phosphorus, and 33 pounds of potash, there will be 10,080 pounds of carbon dioxide utilized.

Air

Air must be present in suitable quantities, if we get the best bacterial activity. A very interesting experiment was carried on in Ohio with a heavy clay soil. The bacteria could not work because of a lack of air. It only had about $2\frac{1}{2}\%$ of its air capacity and was able to produce only $2\frac{1}{2}$ tons of sugar beets. When the clay was loosened and crop rotation carried on and barnyard and green manure added, the capacity of the air in that soil was changed from $2\frac{1}{2}\%$ to 20% and the sugar beets grown increased from $2\frac{1}{2}$ tons to 33 tons per acre. These bacteria contributed very much to this increased plant yield because work could be carried on more effectively in the presence of suitable air.

Minerals

Mineral elements will help the bacteria to grow much more vigorously

and they in turn will help the soil to absorb more of these mineral elements. A man by the name of Geritson found that when the soil bacteria were supplied with phosphorus, there was a 66% increase in the phosphorus content in rye plants, 120% increase in oats, and 154% increase in mustard tissue.

It is interesting to note how sensitive the organisms are to the presence of these minerals. One can determine whether or not there is enough phosphorus in the soil to satisfy the needs of the plant, by growing a mold by the name of *Aspergillus niger*. If there isn't enough phosphorus to meet the mold's needs, the mold will not grow. If it does grow vigorously, then it is found that the plants in that soil will grow vigorously too. There is an organism in the soil that fixes nitrogen called *aztobacter*. It must have a good supply of phosphorus in order to grow. If we mix a soil with varying quantities of phosphorus and incubate the soil at suitable temperature, there will be found quantities of *aztobacter* growing in proportion to the amount of phosphorus present. This too is used to determine the needs of a soil for phosphorus. Similar experiments can be carried out for potash and even calcium. There are a number of these microbial tests for determining soil fertility needs. These are, perhaps, more satisfying than the chemical tests.

These organisms will respond to plowing and cultivation because these activities guarantee a suitable physical condition. This means proper air, moisture, and temperature. These organisms like a change in diet too, so we satisfy these needs by a rotation of crops. These organisms must have a suitable amount of water. If more than two-thirds of the water-holding capacity of the soil is present, you get a limited amount of ammonia formed and a limited amount of ni-

trate formed. A farmer should remember that, when he plows an acre of soil, he is working with a great amount of soil life. If he satisfies the needs of all these different kinds of organisms, he will have better plant growth—indeed there is a relation-

ship between soil condition and soil life.

The mystery associated with the development of seeds in the soil is certainly explained in a proper study and understanding of the life in the soil.

HOW TO TURN DIRT INTO SOIL

By THE MASTER GARDENER

WHAT is soil? Here's a simple definition. "Soil is any medium that will support plant growth," while "dirt" is *any* useless grimy material."

Now, what percentage of American yards have "soil" in them and what percentage contain only "dirt"?

In too many residential areas, the original topsoil was scraped off and sold, or else mixed with the underlying infertile material when the lot was graded. As a result many would-be gardeners are confronted with nothing but "dirt" on which they must attempt to grow lawns and gardens. It's an extraordinary sand or clay fill that will support a garden worthy of the name. Low in plant nutrients, devoid of organic matter and possessing a texture that is either too heavy or too light, the raw subsoil is a dirt—and that is about all.

Making garden-good soil out of plain old dirt can be done—though it requires both time and labor. But when your garden blooms and the grass grows vigorously you can think back to the days when the yard was a barren wasteland and rejoice!

The least laborious, but most expensive, way to get soil is to buy it. However, the prices charged for hauling in topsoil are discouraging to the new home owner, who usually has plenty of other costs to worry about. And unscrupulous individuals in the topsoil business have foisted off some very poor "soil" on uninitiated home owners—and charged them \$8 to \$10 per cubic yard.

If the subsoil fill in the yard is sandy the main problem will be to build up the organic matter in it in order to increase its water holding capacity. Droughtiness is the big disadvantage of sandy soil and since it is impossible to mix cloddy clay with sand, the best practice is to work in all the compost, peat moss, or manure you can. The organic matter should be thickly applied wherever the flower beds will be located, since lawn areas build their own organic matter if they are well fed.

Clay presents a different problem—one of opening it up, decreasing the cloddiness and increasing granulation so that roots can penetrate and water will drain out. Incorporating enough organic matter to accomplish this is a practical impossibility, except in small areas such as flower beds. It is far more practical to "cut" the clay with sand or sifted coal ashes. This is best accomplished by spading, discing, or roto-tilling into the top 6 inches of soil a layer of sand or ashes, *not less than three inches thick*. In fact, a little sand is worse than none at all. Incorporation of any smaller amount will be wasted effort. If, at the same time, some peat, compost or other organic matter can be included, so much the better.

But in improving the physical condition of subsoil materials we have done little to improve the fertility. True, organic matter provides a small amount of nutrients, but the sand and

ashes are "blanks" as far as their nutrient content is concerned. So the final step in making "soil" out of mere "dirt" is to provide nutrients. Give the entire yard a good thorough application of a complete plant food, at the rate of 3 pounds per 100 square feet. You can broadcast the plant food over the surface prior to working in the organic matter, sand or

ashes.

In years to come it will be necessary to maintain your soil just as good farmers manage theirs. Winter cover crops on the vegetable patch, compost spaded into the flower beds and regular feeding of lawn and garden are all good management practices that will keep the new made soil from becoming "dirt".

GOOD HEDGES TAKE TIME

By EARL SINNAMON

NEIGHBOR NUTMEG has a neat, thick hedge with dense foliage all the way to the ground, but this thing around my property looks anemic, sparse and only grows thickly at the top.

Neighbor Nutmeg is an old-time gardener who spends many hours working with plants to make them grow. He doesn't have a magic green thumb which mysteriously causes all of his flowers to grow extra large blossoms and have all of the enviable qualities that we read about in the seed catalogs. His hedge is just the result of many years of patient snipping and clipping.

Each year he raises the cut a few inches to get additional height and still keep a dense foliage. He started the hedge by cutting back each plant half way after the nursery had set them out. This caused the branches to send out many new twigs close to the ground and gave the plants a greater degree of thickness, from the beginning.

Each time he trimmed the hedge with his electric clippers (much more fun to use and a lot less work than the old-fashioned hedge shears) he raised the cutting level about an inch so that at the end of the season he added about two or three inches to the height of the hedge.

One thing that he was careful to

do while trimming the sides was to clip them with a slight taper, making the hedge wider at the bottom than at the top, so that the lower branches would receive an equal amount of sunlight. He did not allow the hedge to grow to the desired height and then start trimming, as so many do, but gradually let it grow higher over a period of years.

So, I guess I'll cut my hedge down about half way and start over again, and I'll be a lot more patient this time.



TREES IN RELATION TO HOME PLANTING

By M. WALTER PESMAN

Paper given at Shade Tree Conference, Denver, February 11, 1953

Texts: Micah 4:4—*They shall sit every man under his vine and under his fig tree; and none shall make them afraid.*

Deuteronomy 20:19—*Thou shalt not destroy the trees—by forcing an axe against them;—and thou shalt not cut them down (for the tree of the field is man's life).*

FROM various indications it might appear that trees are going out of style. We are getting more and more synthetic Christmas trees. Fruit comes out of a can now instead of being gathered from a plum tree or peach tree. Forests of telephone and telegraph poles supersede our live forests of yesterday. Instead of getting shade from trees next to the house, we construct overhanging eaves resembling the peak of a hunter's cap. In an Oslo park a modern sculptor places his statuary under a canopy of trees done in copper and bronze. Crown Hill Memorial Park proposes a central feature of the legendary Abraham's Oak constructed of concrete. Perhaps we can look forward to plastic tree trunks and green-painted leaves (plus gorgeously colored blossoms) placed at the center of an artificial rockgarden done neatly in plaster of paris. When that time comes, this paper will form a valuable record of the quaint period when apparently logical-minded people were willing to go to all the trouble of planting small trees, growing them in places called nurseries, transplanting them, and then—can you believe it?—watering them laboriously and regularly to keep them growing until such time as they were getting too large, diseased, or what not, and had to be replaced by others, after which the whole tedious program started all over again.

Sure enough, cities are efficient tree-killers, and our desert areas of streets

and stores, factories and football fields are being extended from day to day.

For that very reason it behooves us all to pay closer attention to trees around our homes.

Modern city planning, by the way, realizes the danger of treeless metropolitan areas and provides for more-or-less concentric park strips, on which the greedy subdivider may not trespass.

Lately a wave of apprehension has invaded home owners in regard to trees. The atmosphere of alarm in which we are plunged extends to fear that all our elms will be consumed by the Scolytus beetle, that maple scale and pearblight will kill the other shade trees, and that the red spider will suck the life out of all that is left.

Let me begin then, with a word of courage for home-owners: we are finding remedies and resistant trees and shrubs just about as fast as insects combine to give us new scares. Let us plant with a full realization that *no tree is 100% immune from troubles* and that, just as all people are human in their frailties, so all trees are,—shall we say: "tree-ish",—and must be taken as they are, with all their good and their bad qualities. There is no tree that is one hundred percent perfect in all respects.

That in itself makes it all the more necessary for us to be as intelligent as possible in our selection and in the proper location for each tree. In home grounds each tree should be in a place and of a kind that can be defended

against all criticism.

With that precept in mind we need to make a distinction in regard to the purpose for which each tree is planted. Roughly speaking, four types of usefulness stand out. A tree may be:

1. A Parking Tree, primarily for improving the street's appearance.

2. A Framing Tree, mainly to improve the looks of our residence.

3. A Shade Tree, planted particularly for protection against heat.

4. An Ornamental Tree, its main purpose for beauty of form, leaf, fruit or flower.

Naturally, a tree may perform two, three, or all of these functions.

Parking Trees, like the old grey mare, are not what they used to be. In fact, in modern usage,—again like the old grey mare,—they may have ceased to be altogether. With a curb sidewalk and a collection of one-story homes, a continuous row of street trees often become meaningless.

Where overhead wires interfere with tall trees, such rows are particularly impractical. As a result we now find hawthorns, crabapples and mountain ash as street trees in modern subdivisions, while the older portions of a city may still feature elm, honeylocust, maple, ash, or other tall trees; but where they are topped annually to keep them below the telephone wires, their effect is far from beautiful.

Let us not misunderstand each other at this point. I am in perfect agreement with the desirability of small trees (or no street trees) in a neighborhood of low homes, or where overhead wires are unavoidable. But let us not give blind obedience to poles and wires, as if they had a prime, unquestioned right to invade any location. Proper planning is often possible and always of prime importance; it can frequently place wires in alleys or in the rear, and it can locate poles

in spots where they least interfere with important views. We may even arrive at an underground wire system or a wireless distribution of electric energy. No public service is to have *dictatorial* power as a byproduct of *electric* power.

The same desirability of proper planning enters into the type of tree and its continuity. Washington, D. C. has shown how beautiful a unified tree planting can be. A few other towns and cities have taken steps to plan street trees by the block. There may be a certain charm in *variety* of street tree planting depending on the whim of each home owner; in most cases the result is not charm, but chaos. On the other hand, how beautiful Denver might become if we had definite blocks set aside for the planting of honey locust, red oaks, mountain ash, Washington Thorn, and linden, just to give an illustration. And how much future trouble could be avoided by planting them at reasonable distances apart instead of crowding them as they have been so often in the past.

One more possibility should be pointed out. Row planting is logical in most street tree pictures; in special blocks, however, a few individual, well-placed specimens may set off the character of well-designed homes or groups of houses. A subdivider with good taste and broad vision can create a beautiful picture, which cannot help but result in good financial returns. Once we are willing to break with precedent, new possibilities loom up. Slavish following of the past in tree planting becomes particularly foolish where home building itself has broken away from the earlier pattern.

A *Framing Tree* may be a misnomer in certain cases; in general however, most homes profit from one or two trees or tree groups in close proximity, so placed as to form at least a



Appropriate use of trees for framing, shade and beauty at 1198 So. Franklin, Denver. Photo by Edgar E. Warren.

part border, and thus to create a more beautiful picture. Notice that most architects, in submitting their plans, will sketch in such framing trees. Notice also that such sketching trees, are often non-descript as to botanical variety, to be sure, but *do* conform with the architecture as to character and scale. Cottonwoods are not of a size to harmonize with small buildings; they might even succeed in pointing up their smallness.

So here again, we find that the modern tendency is toward the smaller type of tree, as it was found to be with street trees. Russian olives, I find, are much more favored now than they were ten years ago. Pinyon Pines, hawthorns, Japanese Varnish trees, fruit trees are wanted more and more.

The exact location of these "fram-

ing trees" is rather important. You will realize that our home is first seen from an oblique angle, as we approach it from either side. That angle then, is the important one to be considered in framing. Generally speaking, trees or tree groups will look best near the corners of the home, at a 45 degree angle from either wall. As luck will have it, that location is also apt to block out the view to your neighbor's house at the same time. And, better yet, if it happens to be the southwest house corner, such a tree may give shade just where shade is wanted most.

With that we have come to the next group, that of *Shade Trees*. For their location we might well watch the behavior of our pet dog. He will find shady spots in midsummer and warm,

sunny basking places in midwinter; our home grounds should furnish both to give the maximum comfort and usefulness. In this, our deciduous trees have it over our evergreens: they let the sun in on wintry days. Honeylocusts and Kentucky Coffeetrees are ideal in that respect: shade in summer, sun in winter. For heavier shade, linden, sycamore and Norway maple come to mind. Catalpa can be planted in the shade of other trees and so provide a double dose.

Unless you object to slower growth, Red Oak, (and other oaks) Hackberry, and Black Walnut should have strong consideration. On the other extreme, are willows and poplars with almost immediate effect but with all the disadvantages of fast-growing trees: they are gross feeders, plug up any sewer pipes found anywhere in the neighborhood, are apt to be brittle, and thus subject to breakage in snowstorms and windstorms. Chinese

elms belong in this group,—with a vengeance! They are good for a couple of hours' controversy at any tree conference.

Good little boys and girls are apt to keep the best part of meal to the last. And so we have kept *Ornamental Trees* for our dessert. Not that the previously mentioned types are not ornamental, but that a certain group is set aside in our mind as particularly useful for locations that are *focal points* as we call them sometimes.

Ornamental trees, like many ornamental girls, have learned to display their charms to catch your eye at certain psychological times. Mere usefulness, in their case, is not enough. People do not plant weeping white birches for shade, or Dolga crabs for pickling-apples. Many of us are even willing to put up with the "day-after" effect of a Bechtel Flowering Crab since they are so dazzling while they are displaying party-dress.

Crabapple and Honeylocust trees used for shade and ornament at home of Mr. and Mrs. Frank McLister. Landscape Design by Mrs. Persis Owen. Photo by Herrington.



Almost invariably we think of blossoms when talking of Ornamental Trees. All crabapples are outstanding in this way, so are all hawthorns. (Paul's Scarlet Haw is a "knock-out" when in full bloom). Next come Mountain Ash, Japanese Varnish Tree, flowering Plums, and almost all fruit trees. Who cares if the apples are wormy in fall, if the blossoms in spring are cheering to us. We might even risk a number of spring frosts in the hope that our peaches and apricots will bloom once in four years. Of course, if you are a super-tidy housekeeper, you might object to the falling blossoms of catalpa and horse chestnut, or to the "mess" they make in fruit. But that type of gardener would not have too much use for merely ornamental trees in the first place.

Colorful foliage is another attraction. That is why Schwedler Maple steals the show every spring. We have

A Catalpa tree, like this may be used for street, framing, shade or ornament.



hopes that the new patented "Crimson King" will live up to its expectations, since it retains its color all summer, instead of "greening" out as does the Schwedler.

Variegated Boxelder has been known in Europe for a long time; it should be used more here in special spots.

Just because Russian Olives are so easily grown, they are apt to be overlooked among good foliage trees. Let us not forget that their effect against a blue Colorado sky, or against evergreens is most striking. Buffaloberry and Sea Buckthorn are smaller, but have the same silvery foliage.

Purple beech and Japanese maples are hardly safe in the Rocky Mountain region. *Prunus newmanni* is good, but hardly tall enough to be called a tree.

Switching from color in ornamental trees to form and texture, we arrive at the Weepers. "Why can't I have a Weeping Golden Willow in my garden?" It is a very common query, and the answer is equally common: "You certainly can, if you are willing to pay the price. Willows are fast growing, brittle, and have an uncanny proclivity of finding and stopping up sewer pipes". In other words, you can plant golden weeping willows on your own peril,—which, after all, is quite reasonable. (Who else's peril?)

White Weeping Birch is much better-behaved, but is one of those delicate creatures, that must be petted along, especially on first being planted. Weeping Mulberries are imitating a little children's playhouse in their shape. Camperdown Elm is a grafted weeping elm, whose branches resemble a sloping roof. It has a rather weird appearance, but isn't half as weird as the Weeping Mountain Ash, whose branches resemble nothing so much as a nest of huge, wriggling snakes. Well, there's no accounting for taste, and

if anybody wants to imitate the garden of Eden at his home, perhaps the snake has a perfect right to be represented.

In the past, various evergreens like box and yew have been fashioned into the shapes of peacocks, roosters and corkscrews, so—what?

It is called "topiary work", and just between us, it is not too far removed from the close haircut trimming that is often given to junipers and arborvitae. Too many junipers look as if they had just been unpacked from a neatly-painted children's Noah's Ark, and dropped in the most conspicuous place little Johnny could find.

With that, we have accidentally arrived at the topic of evergreens for Home planting. It is not too easy to work in evergreens into a private garden in such a way as to make them look at home. Many people can only think of evergreens as belonging in the mountains.

To make it more difficult: the most spectacular evergreen, our Colorado Blue Spruce, seems to have a tendency of telling everybody in its neighborhood: "Look at me, look at me!" Instead of cooperating with its surroundings, it wants to dominate, both by its shape and by its striking color. A group of spruces is a bit more cooperative.

Pines are less dominating. Most of them, however, have this in common with most spruces, that they get too large for the average home. Pinyon Pine is the blessed exception: it keeps in scale, it has a good shape, and it is not difficult to grow.

Upright junipers of numerous kinds have their place, sometimes as specimen trees, more often in combination with low evergreens, or with deciduous plant material. Most of us can take lessons from the way nature combines its plants, not at evenly set distances, not in straight rows, but in mixed plantings of all kinds of heights and textures, and colors during the season.



A Birch tree is the queen of trees, useful in many ways. Photo by Chas. J. Ott.

Incidentally, we should never fail to take advantage of the "evergreen" quality, by planting colorful things in combination with our conifers. Red dogwood for winter color, forsythia for early spring, viburnums or sumacs for fall.

Perhaps, since I started with a text, you expect me to wind up with an admonition, — perhaps to the effect that we should plant as many trees as possible around the house.

As a landscape architect with an inordinate sense of integrity I cannot conscientiously do so, even at a tree conference.

While the lack of trees gives one a feeling of desolation, especially in a city that is surrounded by our great open plains,—too many trees, crowded together without adequate planning, are almost as unpleasant. On even a large city lot a dozen trees go a long way; half a dozen, carefully placed,

may act as parking trees, provide shade where needed, furnish proper framing and provide ornamentation on the average home plot. Special occasions need special treatment.

There may be situations where a sort of *tree grove* is called for, consisting of closely planted trees at irregular distances. Sometimes a few trunks, close together, create a group that has infinitely more character than a stereotype planting, regularly spaced so as to give each tree a chance to spread out in all directions. Nature does not use a tape measure in spacing her trees. In a group that has grown up together, each tree accommodates itself to its neighbor. We aim for pleasant group planting in a well-landscaped home, rather than a crop of individual specimen trees. This makes for unity in the plan.

By the same token a landscape architect is careful not to specify *one each* of a conglomerate of types and species. After all, a home garden should be something pleasant to look at,—not just a collection of plants, no matter how well grown or how interesting each in itself might be.

At the beginning we pointed out that many functions of trees are being taken over by mechanical means:

Carolina Poplars, inappropriately planted as street trees. Soon no beauty, no shade, no tree.

we can get some shade, some beauty, some interesting sky-tracery,—without the aid of trees. On the other hand we have tried to point out that tree planting *can* be meaningless or characterless. The point is that we should not be satisfied until we have combined their full beauty and their full utility.

The solution is really quite simple, if only we just plant the *right* tree in the *right* spot. Each tree will then fulfill its function in making of our grounds a most essential part of the home itself.

HELP A NEW GARDENER

You have a friend, neighbor or acquaintance who is new at this gardening game? (At least in this area.) Send him a copy of the Green Thumb with an application for membership, or give us his name and we will mail a sample copy. We print some extra copies each month to be used for this purpose.

You will be doing this person a great service by showing him how he can get the answers to his garden problems. In a season's time it should save him many times the \$3.00 invested.

ORDER EXTRA COPIES NOW

Several authorities have said that the Plant Hardiness List printed for the first time in this issue is the most valuable contribution to the horticulture of this area that has ever been made. We have had printed extra copies of this issue in anticipation that many will want extra copies to present to their nurseryman, seedsman or employees so that they may be guided in the selection of hardy plants for the area. These will be sold for 25c as long as they last. If this list were used to check all orders made for unknown material it might well save residents of the state many thousands of dollars annually.



YOUR NEW GARDEN

By ERNST C. SCHEFFLER

YOUR new garden has been carefully designed, built and planted. Your landscape architect wishes this garden to be an enjoyment rather than a disappointment or worry. You do not need a green thumb to be successful. We suggest your maintenance of the garden in an easy and economical way, by simply observing a few rules.

Always act according to the weather! Realize the struggle of the newly planted trees and shrubs during the hot days of the first weeks and months after planting! Do not water them every day but rather once every week *thoroughly*! If the new foliage appears to be wilting on trees and shrubs, establish basins and holes to hold a good amount of water, and moisten the tree trunks and wrap them with burlap. The basins around all larger plants including evergreen should be kept open all during the first growing season. They should be covered with 1 inch of peat to prevent immediate drying out.

If you do the watering of lawns and shrubs patches with a sprinkler, never use full force, and move the sprinkler in time to prevent run-off and erosion. Work this kind of watering in a manner of rotation covering all of your new plant areas and old lawn once every week.

Newly seeded lawns should be watered carefully. The watering by hand with a fine spray must be done whenever the surface appears to be drying out, about every second hour on warm days. If the lawn is up, you may gradually cut down on water as the roots of the grass grow deeper. Now you can use your sprinkler system. Pure blue grass needs more water during the first year, but you should get along with a sprinkling

every day during the first month and every second day during following months, and twice a week during the rest of the season.

The lawn mowers should be adjusted to produce a long cut of 1 inch to 1.5 inches. Short cuts lead to sunburn on hot days. Cut your lawn in the late afternoon and water an established lawn in the evening or at night. If you attempt to fertilize or topdress your lawn, take small amounts and do not forget to water thoroughly after that.

Rose beds and flower beds are best taken care of by flooding with water twice a week during the first month after planting and once a week for the rest of the season. Roses need dusting during the later months of the season.

Stop watering some time in October, according to weather conditions. Before the start of the winter in December, you should water all of your trees and evergreens once more thoroughly. This will prevent the usual winter damage. Have your garden sprayed during March or April to control pests of any kind.

If your garden shows damage of any kind, do not forget to phone your landscape architect immediately.

CORRECTION AND APOLOGY

In May a bad one got by us and we did not discover that we had given credit to the wrong person for all those fine drawings that did so much to brighten up that issue. Pauline Roberts Steele was the person who did them. The Mildred Steele that we mentioned is a contributor of stories on lilies, miniature gardens and such.

PRUNING ORNAMENTAL SHRUBS AND TREES

By DONALD WYMAN

From *Arnoldia*

THE exhibit of pruning at the 1953 Boston Spring Flower Show was assembled by the Arnold Arboretum for the purpose of clearly showing right and wrong methods of pruning. A little knowledge of what to prune and how to do it, goes a very long way in assisting plants to grow into well balanced specimens which prove an asset in any garden. Conversely, the indiscriminate hacking of shrubs and trees at definite heights is the quickest means by which otherwise beautiful plantings are made unsightly. A glance through this exhibit showed some of the following things:

When to Prune

As far as the growth of the plant is concerned, pruning can be done almost any time except in the early summer, but if done then, the new growth may not have sufficient time to mature before winter and killing may result. However, as far as our interest in the ornamental qualities of plants is concerned, shrubs are divided into two groups, those that bloom in the early spring like *Daphne*, *Forsythia* and *Lilac*, which might be pruned after they flower in order to obtain the full benefit of their flower the current year; and secondly, plants which bloom on the current year's wood like *Hydrangea* and *Rose of Sharon* which can be pruned in the late winter or early spring and still be expected to bloom the same year. Trees are usually pruned in the late winter and early spring (with the exception of those that "bleed" profusely like the *Birch*, *Maple*, *Yellow-wood*) for at this time, before the leaves appear, it is much easier to see which branches should be removed, and also

it gives the tree the entire spring and summer to form new growth. However, they can be pruned any time except the "bleeders" as noted above.

What to Prune

1. *Dead, broken or diseased branches.*

2. *Broken roots and one-third of the branches at transplanting time.* Some roots are always cut when a plant is dug. A good general rule is to remove about one third of the total linear branch length when the plant is moved by thinning out weak or damaged branches and correcting structural defects. This compensates for the loss of roots which have been cut in the transplanting operation, and always results in more vigorous plants at the end of the first year. This is hard for the home owner to do, since the new plant looks smaller than the original specimen purchased from the nursery, but it is always better for the plant in the end. When plants are to be moved from their native place in the woods, it is advisable to root prune (merely forcing a spade in the ground in a wide circle about the plant) one year in advance, to force the production of many roots close to the base so the transplanting operation will be easier. Nursery grown plants are usually root pruned periodically.

3. *Young trees should be pruned early.* Timely corrective pruning saves trouble later. If the tree is one that normally has a single trunk, see that only one straight trunk develops and cut out any others that try to grow. Occasionally several branches grow out from the trunk at the same place and these will always make weak crotches. All but one should be re-

moved. In the Flower Show exhibit was a Dogwood plant with many leaders from the base. Unless most of these are removed at once, the plant will be a bush (and a poor one at that) and never a fine tree. Sometimes young shrubs should be "headed back" a bit to force them to grow more branches from the base. A Forsythia, for instance, with just one leader would never become an interesting shrub. In other words, know how the tree or shrub will develop at maturity, and help it early in life by selecting the proper leaders, removing the others if necessary.

4. *Correct structural defects.* Never allow two equally vigorous leaders to develop on exactly opposite sides of the same trunk. This will always be a "weak" crotch, susceptible to splitting as the tree grows older. It may spoil the symmetry of the entire tree when this happens. Examples of several weak crotches were shown in the exhibit.

5. *Cut suckers from the bases of grafted or budded plants.* Many plants used in gardens such as roses, crab apples, lilacs and fruit trees, are either grafted or budded on another kind of understock. Usually, this is never more than a foot or so from the ground. Hence, all suckers developing below this point should be removed as soon as they are observed for if allowed to develop they will not only spoil the symmetry of the plant and sap the strength of the variety wanted, but will develop into an entirely different and usually undesirable plant. An excellent example was shown of a rose, grafted on *Rosa multiflora* in which the understock had completely smothered the original variety. Frequently, when two kinds of blossoms or leaves are seen on one plant, this is the reason. Cut out understock suckers as soon as they develop.

6. *Rejuvenate old shrubs.* A Mock-orange, Privet, Lilac, Spirea or many

another shrub may grow too tall and become open and ungainly at the base. Most shrubs can be rejuvenated in one of two ways: either by cutting the entire shrub to 6" above the ground in early spring and allowing it to develop as a new plant; or by thinning out the old wood, cutting some of the older branches off near the ground and allowing new ones to form, then repeating the process with a few more of the older branches the second and third years. Lilacs are often treated thus, for in this way they produce a few blooms each year of the change, while when they are cut to the ground they do not bloom for two or three years. However, one Forsythia shown in the exhibit was cut to the ground in the spring of '52 and produced a few flower buds for bloom in the spring of '53.

7. *Hedges, screens and windbreaks.* These should be pruned with the objective of increasing their density, for if a twig is cut back a few inches, it frequently sends out more than one new shoot to take the place of the one removed. This growth habit of plants can be utilized to force them to grow more dense.

8. *Certain limbs for utility purposes.* The lower limbs of street trees, or limbs that interfere with a certain view, walk, window or wire, must sometimes be removed.

9. *Girdling root.* Close observation of the base of poor growing trees often discloses a girdling root, that is, a root partly on the surface of the soil or just beneath, that is growing in such a way as to choke or constrict the trunk of the tree or a larger root. Such girdling roots can do real harm and usually should be cut as near as possible to the trunk of the tree or at least at the point where they are doing the damage.

These then, are the reasons for pruning. Be certain the reason for pruning is understood before it is

done, for it is always a dwarfing process, and there are some plants that never need any. Study the situation and have a good reason for all pruning.

How to Prune

1. *Make all cuts clean with sharp tools.*

2. *Never leave any stubs.* A short stub may never heal over and is always a source for infection. Make all cuts back to a bud, branch or main trunk. The removal of a large limb should be done in 3 cuts. First, an undercut is made by sawing up one fourth or one third through the limb about a foot from the trunk of the tree. Then the uppercut is started one to two inches beyond the first cut away from the trunk on the top of the branch and sawed down until the limb falls. As the two cuts near each other and the limb begins to sag, its weight will break the wood at the center and the limb will jump clear without stripping and tearing the bark down the tree trunk. Finally the stump is removed by a cut flush with the trunk of the tree.

3. *Paint all cuts over 1" to 2" in diameter with a protective paint.*

4. *Disinfect tools after each cut on diseased plant.* A satisfactory disinfectant to have in a suitable can for this purpose is alcohol.

5. *Shrub rejuvenation.* Thin out the older branches over a period of a few years or cut the shrub to within a few inches of the ground in late winter or early spring. The obvious exception to this would be weak growing shrubs or those which have been budded or grafted. Never cut any shrub off at a horizontal line several feet above the ground. This is an artificial practice, outmoded for many years, and always results in unsightly specimens. Thin out here and there, cut one branch back hard and another not nearly as much and thin out from

the base, simultaneously. In this way, an old plant can be reduced in size, still look natural and will produce new growth at different places from the ground on up to the top.

6. *Shear hedges wider at the base than the top.* Both evergreen and deciduous hedges should be sheared in such a way that they are wider at the base than the top, thus allowing the important lower branches plenty of room, light and air. If the hedge is pruned narrower at the base than the top, the lower branches will often die from lack of light. Once these lower branches die on an evergreen hedge, it is practically impossible to force any new ones to grow in the same place. Deciduous hedges, on the other hand, are mostly vigorous growing plants, and when they become open at the base, the entire hedge can be cut to within a few inches of the ground in the early spring and will quickly start a new vigorous growth from the ground, thus forming a new hedge in a few years' time.

Pruning need not be difficult. It is important, however, that one understand exactly why the contemplated pruning is necessary and can visualize the probable results. Even yews and rhododendrons can be heavily pruned and old plants rejuvenated by the expert gardener who has previously studied what to do, and when to do it. The exhibit at the Boston Spring Flower Show clearly demonstrated many good and bad methods of pruning and the growth made by the plants as a result of certain practices.

LIBRARY DONORS

May, 1953

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The Library Council of the Colorado Forestry and Horticulture Association
Wednesday Garden Forum and Red Thumb

A PROPHET IS NOT WITHOUT HONOR

Mrs. Frank Edward Neal of Lafayette, Colo., has been given an especial honor by being asked to be chairman of the National Blue Star Memorial Highway committee of the National Federation of Garden Clubs.

Mrs. Neal accepted the Chairmanship of the state committee a few years ago and took the responsibility seriously. She and her husband have put in many long hours traveling these highways to locate roadside sites, in erecting markers and fireplaces and in contacting the numerous people necessary to carry on these projects. Some, who might have been helping her, have criticized her methods for she did not always go through the customary "channels" to accomplish her purposes. She did get things done and as time goes on we will begin to appreciate her work much as we are now learning to appreciate the accomplishments of Mayor Speer and George Cranmer.

We wish her success in her new and larger assignment.

"Half a proper gardener's work is done upon his knees."—Kipling.

KEEGAN'S LILAC LANE

By S. R. DE BOER

The Denver Botanic Garden in City Park has received the lilac collection donated by Milton Keegan. These had been planted two years ago in a locality where maintenance was difficult. They are now in the heart of the Botanic Garden and went through the transplanting without loss. They are planted along a grass lane. Some flowered even this year, but it will take a few seasons to bring them all in full bloom.

The following varieties are now in the lilac lane:

Vestale	Clark's Giant
Night	Mme. F. Morel
Glory	Oliver de Serres
Mrs. W. E.	Pres. Fallieres
Marshall	Esther Staley
Lucy Baltet	White Swan
Massena	Duc de Massa
Edith Cavell	Katherine
Marechal Foch	Havemeyer
Maurice Barres	De Mirabel
Capt. Baltet	Reaumar
Macrostachya	Prodige
Pres. Lincoln	Blue Hyacinth
Monge	Diderot
Leon Gambetta	Victor Lemoine
Etna	Emil Gentil
Firmament	Ludwig Spaeth
Edw. Andre	Virginite
Syr. persica	Rosace
lacianata	Marengo
Capt. Ferroult	Henri Robert
Mme. Souchet	Decaisne
Paul de chanet	Mme. A. Buchner
Ami Schoti	Charles Joly
Syr. chinensis	Rouen
saugena	Paul Thiron

In addition to these the city has several varieties of its own, not yet transplanted.

Mr. Keegan intends to add to the collection from year to year and the Denver Botanic Garden expects to have over one hundred top varieties of lilacs in a few years.



HARDINESS AND DESIRABILITY OF WOODY PLANTS FOR LANDSCAPE USE IN COLORADO

THIS list covers such woody plants, including evergreens, deciduous trees, shrubs and vines, as are commonly grown in Colorado as well as those only suitable for growing in other climates which are sometimes offered for sale here. They are arranged alphabetically by their botanical names, but the accepted common name is included where one is known. Nomenclature is that of Standardized Plant Names.

Appraisal of perennials and annuals is not made here because they are generally affected by fewer climatic conditions, their chief difficulty being the generally alkaline soil and the shortness of the growing season or erratic spring weather.

Tree fruits and small fruits are adequately dealt with in bulletins issued by the extension service of the Colorado A. & M. College at Ft. Collins, Colorado.

This rating of the average chances of survival and desirability of plants for Colorado is made jointly by representatives of the Horticulture De-

partment of the Colorado A. & M. College, the Extension Department of the Colorado A. & M. College, the Denver City Forester's Office, the Denver Parks Department, the Denver County Agent, the Colorado Nurserymen's Association, Denver Landscape Architects, the State Entomologist's Office and the Colorado Forestry and Horticulture Association.

The appraisals of plants here made represent a total of many years experience with these plants. These represent averages under varying conditions and weather, and there will be exceptions occasionally. It is well for any gardener or home owner to plan the landscaping of his home with "fool-proof" material largely, and first of all, and keep the proportion of questionable material low enough to simply add a little zest to gardening.

Usually the best assurance of receiving value for the landscape dollar is to deal with established and reputable firms who can be depended on to give correct planting advice. "Bargain" offers are too expensive for poor people to risk their money on.

KEY

All CAPITAL letters refer primarily to hardiness. A rating of "A" indicates a plant that is ordinarily hardy in the Denver area in normal plantings where the wind and sun have full sweep. "B" indicates a plant more susceptible to injury, the result of natural conditions of soil and weather. "B" plants might be classified as "A" plants when planted in more protected locations. "F" indicates that ten to twenty percent of the plants planted may survive under normal exposure in the Denver area. "Z" indicates that one or two percent of the plants planted may survive in protected locations only. A "protected location" is usually an area on the north or east of a structure or other plant or group of plants. The protected location may be further enhanced when conditions or air and water drainage are ideal and "frost pockets" have been avoided.

Small letters refer to desirability for planting other than hardiness; "a" for good, "b" a little less desirable, "f" for poor and "z" for no good, "m" indicates plants most likely to succeed at the higher altitudes and "p" those most likely to succeed under plains conditions. Native plants are marked with "*".

EXAMPLE: Boxelder trees are very hardy but are not desirable where better

trees will grow so they are marked—*, A, f, p, m. "*" indicates that it is a native, "A" that it is hardy, "f" that it is poor quality. "p" and "m" that it is adapted to the plains and mountains where better trees might be more difficult to grow.

- AbeliaZ
- Abies, FIR
balsamea, BALSAM FIR.....F
concolor, WHITE. Difficult to start in nursery*B,a,m
lasiocarpa, ALPINE. Data on use at low altitudes very meager; good in cool moist mountain location.....*F,m
lasiocarpa, arizonica, CORKBARK. Data scarce; more promise.....*F,m
- AcaciaZ
- Acanthopanax, FIVELEAF ARALIA. Normally has some winterkill. Good for shadeB,a
- Acer, MAPLE
campestre, HEDGEB,a
ginnala, AMURA,a
glabrum, ROCKY MOUNTAIN. Short lived, requires shade.....*A,b,m
grandidentatum, BIG TOOTH. (Unproven. Magnificent color).....*B,a,m
negundo, BOXELDER*A,f,m,p
palmatum, JAPANESE. Tender stock, an occasional variety might survive..F
platanoides, COLUMNARF
platanoides, CRIMSON KING. New, data of limited extent to date.....F,a
platanoides, NORWAYB,a
platanoides, NORWAY GLOBE.....B,a
platanoides, SCHWEDLER. Winter burns easilyB,a
pseudoplatanus, PLANEB,a
rubrum, RED. Not sufficiently tried...F
saccharinum, SOFT. Subject to chlorosis in Denver.....A,b
saccharinum weir, WIER CUT-LEAFB,b
saccharum, SUGAR. Less hardy than NORWAYB,a
SKINNER CUTLEAFB,a
tataricum, TATARIANA,b
- Aesculus, BUCKEYE, HORSECHEST-NUT
glabra (Ohio), BUCKEYE.....B,a
hippocastanum, COMMON HORSE-CHESTNUTB,a
Octandra (yellow), BUCKEYE.....A,a
parviflora (bottlebrush), SHRUB BUCKEYEF
RED FLOWERED BUCKEYEF
- Ailanthus, TREEOFHEAVEN. Tolerates smoke and poor soil.....A,b
- Alnus, ALDER
glutinosa, EUROPEANB,a
tenuifolia, THINLEAF*A,b,m
- Amelanchier, SERVICEBERRY. Western species tolerate drouth.....*A,b
introduced speciesB,b
- Amorpha
canescens, LEADPLANT. Tolerates alkaline soil*A,a,m,p
fruticosa, INDIGOBUSH*A,b,m
nana, DWARF INDIGOBUSH.....*A,a
- Andromeda, PIERISZ
- Aralia
spinosa, DEVIL'S WALKINGSTICK, HERCULES CLUB, kills back sometimes. A novelty for collections. Root hardyB,b
- Arctostaphylos uva-ursi, KINNIKIN-NICK, BEARBERRY. Requires good drainage and acid soil, difficult to collect. Easy from potted cuttings which a few out of state nurseries now offer*B,a,m
- Aristolochia, DUTCHMAN'S PIPE....B,b
- Aronia, CHOKECHERRY
arbutifolia, REDB,b
melanocarpa, BLACKB,b
- Astilbe, SPIREAB,b
- AzaleaZ
- Baccharis, GROUNDSEL BUSH. For desert areas along streams.....*B,b,p
- Bambusa, BAMBOO. For southern locationsF
- Berberis, BARBERRY. Barberries are subject to chlorosis
julianae, WINTERGREENF
koreanaA,a,m
mentorensisB,a
thunbergi, JAPANESEA,a
atropurpurea, REDLEAFA,a
columnberryB,a
"thornless"B,b
verruculosa, WARTYF
- Betula, BIRCH
fontinalis, WATERBIRCH*A,b,m
glandulosa, BOG. Has never been successfully transplanted in Denver. O.K. in moist mountain locations.....*F,a,m
lutea, YELLOWB,b
nigra, RIVERB,b
papyrifera, PAPERB,a
pendula, EUROPEAN WHITE. Common cutleaf weeping. Serious damage, recently, by Bronze Birch Borer.B,a
populifolia, GRAYB,a
- Buddleia, BUTTERFLYBUSH
alternifolia, FOUNTAIN HARDY..A,a
davidi, COMMON. Usually dies back to ground each year.....B,a
- Buxus, BOX. All varieties tender except microphylla, KoreanaZ
microphylla, Koreana. LITTLELEAF Korean box, this is probably hardyB,a

- Callicarpa, BEAUTYBERRYZ
 Calluna, HEATHERZ
 Calycanthus, SWEETSHRUBF
 CamelliaZ
 Campsis, TRUMPETCREEPER. Winter-
 kills back at first.....B,a
 Caragana, PEASHRUB
 arborescens, SIBERIAN. Tolerates al-
 kaliA,b,p
 aurantiaca, DWARFA,a
 frutex, RUSSIANA,b
 pygmaea, PYGMYA,a
 Carpinus, HORNBEAMF
 Carya, HICKORYF
 Caryopteris, BLUEBEARD, BLUEMIST.
 Kills back like buddleia.....B,a
 Cassia, SENNAF
 Castanea, CHESTNUT. Blight danger
 greatZ
 Catalpa
 bignonioides, UMBRELLAF
 speciosa, NORTHERNB,a
 ovata, CHINESEB,a
 bungei, MANCHURIANF,a
 Ceanothus
 americanus, REDROOT. Difficult to
 transplantF
 fendleri, FENDLER CEANOTHUS.
 This and the next are difficult to col-
 lect—are not available commer-
 cially*F,b
 velutinus, SNOWBUSH, evergreen.*F,b
 Cedrus, CEDAR OF LEBANON. All
 other true cedars are equally tender..Z
 Celastrus, BITTERSWEET. Requires pol-
 lenizerB,a
 Celtis, HACKBERRY
 laevigata, SUGAR. Hard to trans-
 plantF,a
 occidentalis, Common*A,a,p
 Cephalanthus, BUTTONBUSHB
 Cercidiphyllum, KATSURATREEF
 Cercis, REDBUD. Beautiful enough to
 justify a trial. Many winterkill.....B,a
 Cercocarpus, MOUNTAINMAHOGANY
 intricatus, LITTLELEAF. Dry
 slopes*B,b
 montanus, TRUE*A,b,m
 Chamaebatiaria, FERNBUSH. Subject to
 red spiderF
 Chaenomeles, FLOWERING QUINCE.
 Subject to chlorosis.....A,a
 Chamaecyparis, FALSECYPRESS. Vir-
 tually untriedF
 Chilopsis linearis, DESERTWILLOW.
 Good in southern part of state.....F
 Chionanthus, FRINGETREEF,a
 Chrysothamnus, RABBITBRUSH. For dry
 prairies*A,b,m,p
 CitrusZ
 Cladrastis, YELLOWWOODB,a
 Clematis
 crispa, CURLYB,a
 jackmaniB,a
 ligusticifolia, WESTERN VIRGINS-
 BOWER*A,b
 montana, ANENOMEF
 orientalis, ORIENTALA,b,m
 paniculata, SWEET AUTUMN.....A,a
 pseudoalpina, ROCKY MOUNTAIN.
 Has been tried but little in
 Denver*B,b,m
 tangutica, GOLDENA,a
 texensis, SCARLET. Treat as peren-
 nialA,a
 henryi, WHITEB,a
 Mme. Ed Andre, RED.....B,a
 ramona, BLUEB,a
 Clethra, PEPPERBUSHZ
 Colutea, BLADDERSENNA. Kills back
 some at first.....B,b
 Cornus, DOGWOOD
 Alba siberica, SIBERIAN. Subject to
 blightB,a
 baileyi, BAILEY*A,b,m
 florida, FLOWERINGZ
 mas, CORNELIANCHERRY. Blooms
 infrequently, but does not fruit....B,b
 sanguinea, BLOODTWIGA,b
 stolonifera coloradensis,
 REDOSIER*A,a,m
 racemosa, GRAYA,a
 flavirimea, YELLOWTWIG. Subject to
 black blightB,b
 Corylus, HAZELNUT, FILBERT
 americana, AMERICANB,b
 cornuta (rostrata), BEAKED.....*A,b,m
 Cotinus, SMOKETREEB,a
 Cotoneaster
 acutifolia, PEKINGA,a,m,p
 adpressa, CREEPINGB,a
 dielsiana, DIELSF
 divaricata, SPREADINGB,a
 horizontalis, ROCK. Has been tried
 but littleF
 integerrima, EUROPEANA,a
 multifloraB,b
 apiculata, CRANBERRYF,a
 Cowania, CLIFFROSE. Native, should be
 used more for dry locations.....*B,b
 Crataegus, HAWTHORN
 coccinioides, KANSASB,a
 coccinea, THICKETA,a
 coloradensis, COLORADO*A,a
 crusgalli, COCKSPURA,a
 oxyacantha, ENGLISH. Subject to fire-
 blightB,a
 oxyacantha, PAUL'S SCARLET. Sub-
 ject to fire-blight.....B,a
 phaenopyrum, WASHINGTONA,a
 punctata, DOTTEDB,a
 saligna, WILLOW*B,b
 mollis, DOWNYA,a

- rivularis, RIVER B,b
 succulenta. Should be grown more..*A,a
 Cytisus, BROOM F
 Daphne, CNEORUM F
 Deutzia F
 Diospyros, PERSIMMON Z
 Elaeagnus
 angustifolia, RUSSIANOLIVE..A,a,m,p
 commutata, SILVERBERRY. Suckers
 freely *A,a,m
 umbellata, AUTUMN A,b
 Enkianthus Z
 Ephedra, JOINTFIR. Desert plant—diffi-
 cult to collect.....*B,b
 Erica, HEATH Z
 Eucalyptus Z
 Euonymus
 alatus, WINGED A,a
 compactus B,a
 americanus, BROOK B,a
 atropurpureus, EASTERN WA-
 HOO A,a
 europaeus, EUROPEAN A,b
 fortunei, WINTERCREEPER B,a
 radicans, COMMON B,a
 vegetus, BIGLEAF B,a
 kiautschovicus patens, SPREAD-
 ING F,a
 minimus (Kewensis), BABY..... A,a
 Exochorda, PEARLBUSH B,b
 Fagus, BEECH. Several have survived in
 Denver F
 Fallugia, APACHEPLUME. Should be
 used more, gets messy with
 age *A,b,p
 Fendlera, CLIFF FENDERBUSH. Native,
 similar to mockorange.....*B,b
 Fontanesia. Like a tall honeysuckle.....A,b
 Forestiera, MOUNTAIN PRIVET..*A,b,m
 Forsythia. Spring frosts often kill flowers.
 intermedia, BORDER A,b
 ovata, EARLY A,f
 spectabilis, SHOWY A,a
 suspensa, WEEPING A,a
 fortunei, FORTUNE A,a
 Franklinia, GORDONIA Z
 Fraxinus, ASH
 americana, WHITE A,b
 anomala, SINGLE LEAF *B,b
 nigra, BLACK B,b
 pennsylvanica, lanceolata,
 GREEN A,a,p
 quadrangulata, BLUE F,b
 Fuchsia, HARDY Z
 Gardenia Z
 Genista, WOODWAXEN B,b
 Ginkgo, MAIDENHAIRTREE F,a
 Gleditsia triacanthus, HONEYLOCUST
 COMMON A,a,p
 moraine A,a
 inermis, THORNLESS A,a,p
 Gymnocladus, COFFEETREE. Deep
 rooted A,a
 Hamamelis, WITCHHAZEL F
 Hedera Helix, ENGLISH IVY. Grows
 only in shade.....B,a
 Hibiscus
 rosemallow A,a
 syriacus, SHRUBALTHEA B,a
 Hippophae, SEABUCKTHORN. Suckers
 freely A,b
 Holodiscus, ROCKSPIREA
 dumosus, BUSH *A,b,m
 discolor, CREAMBUSH. Has been tried
 but little F
 Hydrangea. Prefers shade.
 arborescens, A.G. B,a
 paniculata, P.G. B,a
 tree Z
 vine F
 blue F
 acuminata B
 quercifolia F
 Hypericum, STJOHNSWORT F
 Ilex, HOLLY Z
 Jamesia, CLIFF JAMESIA.....*B,b
 Jasminum, JASMINE
 nudiflorum, WINTER F,b
 Juglans, WALNUT
 nigra, BLACK B,a
 cinerea, BUTTERNUT F,b
 regina, PERSIAN WALNUT F,a
 rupestris, TEXAS. Fast growing.....A,b
 Juniperus
 chinensis, CHINESE. Holds dead
 needles B,b
 japonica, JAPANESE. (Often listed as
 procumbens) A,b
 pfitzer. One of the finest ever-
 greens A,a,m,p
 HETZI B,a
 communis saxatilis, MOUNTAN COM-
 MON. Browns in full sun.....*A,b,m
 excelsa, GREEK F
 horizontalis, CREEPING. Varieties:
 BLACKHILLS, WYOMING.....*A,a
 ANDORRA B,a
 monosperma, ONE SEED. Tolerates al-
 kali. Prune severely to prevent snow
 injury *A,a,m,p
 KEETLER B,a
 sabina, SAVIN A,b
 Russian Savin No. 3 and No. 4....A,a,m
 TAMARIX. Very fine.....A,a
 VONEHRON A,a
 scopulorum, ROCKY MOUNTAIN.
 Subject to aphid and mites—spray.
 Varieties: Gray GLEAM, SUTHER-
 LAND, PATHFINDER, and
 others *A,a,m,p
 utahensis, UTAH *A,b,m,p
 virginiana, EASTERN REDCEDAR.
 Subject to aphid and mites—spray.
 Varieties: DUNDEE, CANAERT
 and others A,a

- Kalmia, MOUNTAIN LAUREL.....Z
 KerriaF
 KOELREUTERIA, GOLDENRAIN-
 TREE. Sometimes winterkills
 backB,a
 Kolkwitzia, BEAUTYBUSHB,b
 Laburnum, GOLDENCHAINF
 Lagerstromia, CRAPEMYRTLEZ
 Larix, LARCH
 decidua, EUROPEANB,a
 laricina, EASTERNA,a
 siberica, SIBERIAN. Shows promise..B,a
 Lespedeza, DESMODIUM. Bicolor, dies
 backA,b
 Ligustrum, PRIVET
 amurense, AMURA,b
 iboliumA,b
 ibotaA,b
 regalianum, REGELSA,a
 ovalifolium, CALIFORNIAF
 vulgare, EUROPEANA,a
 lodenseA,a
 PolishA,a
 Liquidambar, SWEETGUMZ
 Liriodendron, TULIPTREE. Beautiful,
 worth a trial.....F,a
 Lonicera, HONEYSUCKLE
 bella, BELLA,b
 fragrantissima, WINTERF
 heckrotti, EVERBLOOMING.....A,a
 GOLDFLAMEA,a
 involucrata, BEARBERRY. Needs deep,
 moist shade*A,b
 japonica, halliana, JAPANESE.....A,a
 korolkowi, BLUELEAFA,a
 maacki, AMURA,b
 sakhalin, SAKHALINA,b
 morrowi, MORROWA,b
 periclymenum, WOODBINEA,b
 sempervirens, TRUMPETA,a
 spinosa alberti, ALBERT.....A,a
 syringantha, LILACA,a
 tatarica, TATARIANA,b
 Lycium halimifolium, MATRIMONY
 VINEA,f
 Maclura, OSAGE ORANGE.....F,b
 Magnolia. A few have survived in Denver.
 acuminata, CUCUMBERTREEF,a
 grandiflora, SOUTHERNZ
 soulangeana, SAUCERZ
 stellata, STARZ
 Mahonia
 aquifolium, OREGONGRAPE. Put in
 protected locationB,a
 repens, CREEPING*A,b,m
 Malus, CRABAPPLE
 arnoldiana, ARNOLDB,a
 baccata, SIBERIANB,b
 coronaria, WILD SWEET.....B,a
 floribunda, JAPANESE FLOWER-
 INGB,a
 joensis, PRAIRIEA,b
 BECHTELA,a
 purpurea, ELEYA,a
 scheideckeri, SCHEIDECKERB,a
 HOPAA,a
 DOLGAA,a
 thiefera, TEAB,a
 PARKMANB,a
 RED SILVERA,a
 Mimosa, SENSITIVE PLANT.....Z
 Morus, MULBERRY. Winterkills.....B,b
 Russian. Recommended for shelter belts
 in dry land areas.....B,b
 weepingB,b
 Myrtus, MYRTLEA,a
 NandinaZ
 Nerium, OLEANDERZ
 Nyssa, TUPELO, BLACK GUM.....Z
 Ostrya, HOPHORNBEAMF
 Pachistima, MOUNTAINFLOWER. Very
 difficult to transplant.....*F,a,m
 Parthenocissus, CREEPER
 quinquefolia, VIRGINIA
 CREEPERA,b
 engelmanni, ENGELMANNA,a
 saintpauli, SAINT PAUL.....A,a
 tricuspidata, BOSTONA,a
 Peraphyllum, SQUAWAPPLE. Should be
 tried more often.....*F,b
 Philadelphus, MOCKORANGE
 coronarius, SWEETA,a
 grandiflorus, BIG SCENTLESSA,a
 atlasB,a
 lemoineiA,a
 hybridsB,a
 virginalis, VIRGINALB,a
 bouquet blancB,a
 innocenceB,a
 belle etoileB,a
 MINNESOTA SNOWFLAKEA,a
 Photinia, CHRISTMASBERRYZ
 Physocarpus, NINEBARK
 monogynus, MOUNTAIN*A,b
 opulifolius, COMMONA,b
 nana, DWARFA,a
 Picea, SPRUCE
 abies, NORWAYF
 engelmanni, ENGELMANN*B,b,m
 glauca, WHITEF,a
 albertiana conica, DWARF ALBERTA.
 Use in protected location.....B,a
 densata, BLACK HILLS.....A,a
 pungens, COLORADO*A,a,m
 Pinus, PINE
 aristata, BRISTLECONE*A,a,m
 cembra, SWISS STONE.....B,a
 contorta, SHORE PINE.....A,a
 contorta latifolia, LODGEPOLE.*A,b,m
 cembroides edulis, COLORADO PIN-
 YON PINE. Should not be over-
 watered*A,a,m,p
 flexilis, LIMBER*A,a,m
 mugo mughus, MUGHO.....A,a
 nigra, AUSTRIANA,a,p
 ponderosa, PONDEROSA*A,a,m,p

- strobis, WHITE. Often winter-burns B,a
 sylvestris, SCOTCH A,b
 Platanus, PLANE TREE OR SYCAMORE
 occidentalis, AMERICAN. Subject to anthracnose disease B,a
 orientalis, ORIENTAL B,a
 Polygonum auberti, SILVERLACE VINE A,a
 Populus, POPLAR. All short lived, and soon ruined by insects and diseases.
 acuminata, LANCELEAF *A,a,m
 alba, WHITE. Suckers freely A,b
 angustifolia, NARROWLEAF *A,b,m
 bolleana F
 canadensis erecta, CAROLINA F
 nigra, BLACK B,b
 lombardy F
 sargentii, plains. COTTONLESS. Longer lived than others *A,a,m
 simoni, CHINESE B,b
 tremuloides, QUAKING ASPEN. Difficult in Denver *A,b,m
 Potentilla, BUSH CINQUEFOIL
 fruticosa, BUSH CINQUEFOIL *A,b,m
 golddrop A,a
 veitchi, WHITE A,a
 Prunus, PLUM AND CHERRY
 americana, AMERICAN *A,b,m
 amygdalus, ALMOND B,b
 cerasus, SOUR CHERRY A,a
 cistena, PURPLE PLUM A,a
 glandulosa, FLOWERING ALMOND A,a
 padus, EUROPEAN BIRD-CHERRY B,a
 pennsylvanica. PINCHERRY. Suckers freely *A,b,m
 persica, PEACH. Undependable fruiting in Denver B,a
 pumila, SANDCHERRY *A,b,m
 serotina, BLACKCHERRY. Winter-burns B,a
 tomentosa, NANKING, MANCHU. Good fruit A,a
 triloba, FLOWERING PLUM A,a
 v. demissa, CHOKECHERRY *A,a,m
 Pseudotsuga, DOUGLASFIR. Alternate host of spruce gall aphid. Good for altitude above 6000 feet *A,b,m
 Ptelea, HOPTREE *B,b
 Purshia, BITTERBRUSH *A,b,m
 Pyracantha, FIRETHORN. Dependable in southern part of state F,a
 Pyrus, PEAR. Subject to fire-blight F
 Quercus, OAK
 alba, WHITE F
 borealis, NORTHERN RED. Somewhat subject to chlorosis B,a
 coccinea, SCARLET B,b
 falcata, SOUTHERN RED B,a
 gambeli, SCRUB. Almost impossible to transplant *A,f
 palustris, PIN. Very subject to chlorosis B,a
 robur, ENGLISH B,a
 macrocarpa, BUR A,a
 Rhamnus, BUCKTHORN
 cathartica, COMMON A,b
 rupestris, (frangula) GLOSSY B,b
 Rhododendron Z
 Rhodotypos, JETBEAD B,a
 Rhus, SUMAC
 aromatica, FRAGRANT A,b
 glabra, SMOOTH A,a
 cismontana, ROCKY MOUNTAIN *A,a,m
 trilobata, SKUNKBUSH *A,b,m,p
 typhina, STAGHORN A,a,p
 laciniata, CUTLEAF SMOOTH A,a,p
 Ribes, CURRANT & GOOSEBERRY
 alpinum, ALPINE A,a,m
 americanum, AMERICAN BLACK *A,b
 aureum, GOLDEN *A,b,m
 cereum, WAX *B,b,m
 coloradense, COLORADO *B,b
 inerme, WHITESTEM GOOSEBERRY *A,b
 Robinia, LOCUST
 neomexicana, NEW MEXICAN. Suckers *B,a,m,p
 pseudoacacia, BLACK. Subject to borers F
 hispida, ROSEACACIA. Suckers A,a
 Rosa
 blanda, MEADOW A,b
 foetida bicolor, AUSTRIAN COPPER A,a
 harisoni, HARISONS A,b
 hugonis, FATHER HUGO ROSE. Seldom effective. Severe insect damage B,a
 multiflora, JAPANESE B,b
 rugosa B,a
 setigera, PRAIRIE A,a
 hybrid tea B,a
 floribunda A,a
 climbers A,a
 tree roses F
 Rubus, RASPBERRY
 deliciosus, THIMBLEBERRY, BOULDER *A,a,m
 strigosus, RASPBERRY, AMERICAN RED *A,b,m
 Salix, WILLOW. All willows generally damaged by canker.
 alba, WHITE A,b
 amygdaloides, PEACHLEAF WILLOW *A,f
 babylonica, BABYLON WEEPING WILLOW B,a
 blanda, WISCONSIN B,a
 discolor, PUSSY B,b

- exigua, COYOTE*A,f,m
 nigra, BLACKB,b
 irrorata, BLUE STEM.....*A,a,m
 purpurea nana, ALPINE.....B,a
 pentandra, LAURELB,a
 Sambucus, ELDER
 canadensis, AMERICANA,a
 microbotrys, BUNCHBERRY*A,b
 Sapindus, SOAPBERRYF
 SassafrasZ
 Sciadopitys, UMBRELLA PINE.....Z
 SequoiaZ
 Shepherdia, BUFFALOBERRY
 argentea, SILVER*A,b,m
 canadensis, RUSSET. Needs shade, acid
 soil*B,a,m
 Sophora japonica, JAPANESE PAGODA-
 TREE. Hard starting.....B,a
 Sorbus, MOUNTAINASH. Often winter-
 burns unless wrapped.
 Americana, AMERICANB,a
 aucuparia, EUROPEANB,a
 scopolina, GREENES*B,a
 quercifolia, OAKLEAFB,a
 Spiraea
 arguta, GARLANDA,a
 billardi, BILLARDB,b
 bummaldaB,b
 Anthony WatererB,b
 Froebel. Subject to chlorosis.....B,a
 callosa alba, WHITE.....B,b
 prunifolia, DOUBLE BRIDAL-
 WREATH. Subject to chlorosis....B,b
 thunbergiA,b
 V. H., Van HOUTTE.....A,a,p
 KoreanA,a
 Staphylea, BLADDERNUTF
 Symphoricarpus, SNOWBERRY
 albus, COMMONA,a
 chenaultiA,a
 mollis, SPREADINGA,b
 occidentalis, WOLFBERRYA,b
 orbiculatus, CORALBERRYA,a
 oreophilus, MOUNTAIN*A,a,m
 Syringa, LILAC
 amurensis japonica, JAPANESE TREE
 LILACA,a
 chinensis, CHINESEA,a
 josikaea, HUNGARIANA,a
 pekinensis, PEKINGA,a
 persica, PERSIANA,a
 prestoniae, PRESTONA,a,m
 villosa, LATEA,a
 vulgaris, COMMONA,a,m,p
 French hybridsA,a
 Tamarix, TAMARISK
 africanaF
 hispida, KASHGAR. Subject to leaf-
 hopper damageA,b
 Taxodium, BALDCYPRESS. Has not been
 triedZ
 Taxus, YEW
 baccata, ENGLISHZ
 chinensis, CHINESEZ
 cuspidata nana, DWARF JAPANESE.
 Keep in shadeB,a
 Thuja, ARBORVITAE
 occidentalis, AMERICAN. In protected
 locationsB,a
 orientalis, ORIENTALF
 Tilia, LINDEN or BASSWOOD
 americana, AMERICANA,a
 cordata, LITTLELEAF. Very desir-
 ableA,a
 europaea, EUROPEANA,a
 platyphyllos, BIGLEAFB,a
 Ulmus, ELM
 americana, AMERICAN. Subject to
 scale and possibly Dutch elm disease.
 The variety "ascendens" seems prom-
 isingA,a
 parvifolia, CHINESEZ
 procera, ENGLISHA,a
 pumila, SIBERIAN. Good for dry
 locationsA,f,p
 ROCKA,a
 Vaccinium, BLUEBERRYZ
 Viburnum
 acerifolium, MAPLELEAFF
 burkwoodi, BURKWOODB,a
 carlesi, KOREANSPICEB,a
 cassinoides, WITHRODF
 dentatum, ARROWWOODA,a
 dilitatum, LINDENF
 lantana, WAYFARINGTREEA,a
 lentago, NANNYBERRYA,a
 molle, KENTUCKYF
 opulus, CRANBERRYBUSHA,a
 nanum, DWARF CRANBERRY-
 BUSHB,a
 trilobum, AMERICAN CRANBERRY-
 BUSHA,a
 SNOWBALLA,b
 pauciflorum, MOOSEBERRY. Has not
 been tried in Denver.....*B,b,m
 prunifolium, BLACKHAWB,a
 rhytidophyllum, LEATHERLEAFF
 tomentosum, DOUBLEFILEF
 Vitex, CHASTETREE
 macrophylla. Kills back each year like
 BuddleiaB,a
 Vitis, GRAPE*A,a
 Weigela. Variety BRISTOL RUBY seems
 hardestB,a
 WistariaB,a
 Xanthoceras, YELLOWHORNB,b
 Xanthorhiza, YELLOWROOTZ
 Yucca, SOAPWEED*A,b,m
 ZelkovaZ

"We pass this way but once. Let
 us beautify the path as we go, so that
 the world may see which way we
 went."—Rev. C. S. Harrison.

Conservation Activities

By FRED R. JOHNSON

House Bill 4023, introduced by Congressman D'Ewart of Montana, and its counterpart (S. 1491) introduced in the Senate by Senators Butler of Nebraska and Barrett of Wyoming, were considered by our Board of Directors at meetings on April 24 and May 8.

The proponents of the measure call it a Uniform Grazing Bill, which, they allege, will stabilize and make uniform the grazing of livestock on the National Forests and public domain. The opponents of the bill believe that its enactment would result in gradual control of a considerable area of public land by a small group of users.

A committee, consisting of Dr. Moras Shubert, Herbert C. Gundell and Mrs. Charlotte Barbour, after studying the provisions of the bill, submitted a letter to the board listing five specific objections. They stated that the bill provides for nothing that will insure better land utilization practices, and that such legislation might eventually result in squeezing out many small operators. They recommended that the bill be withdrawn.

The committee recommendations were approved and the letter was sent to all members of the House and Senate sub-committees on public lands, also to all members of the Colorado House and Senate delegations. To date eleven replies have been received. Six Senators and Congressmen were non-committal, four are opposed to the legislation and one indicated his approval. Hearings were held by both Senate and House committees during May.

Senator James F. Murray of Montana epitomizes the legislation in these words, "The net result of this bill is to give livestock men a saleable, transferrable and continuing vested right

in the public domain, an inclusive advisory relationship to the administrators and expanded opportunity to use the already overloaded courts to enjoin, delay and make ineffective administrative decisions adverse to them."

AN APPEAL TO THE PEOPLE OF COLORADO

By PHILIP BAKER

This is to be an appeal. An appeal to those who feel that 'tis a privilege to live in Colorado and to those who are aware that responsibility is necessarily a part of any privilege.

We of Colorado are privileged to have within the border of our state a National Park. Upon us, more than anyone else, rests the responsibility of protecting this park.

There are Federal employees whose job it is to protect this park, but they are servants subject to the will of the public.

There has been in recent months a concerted effort to obtain the permission of the Federal Government to develop a ski area within the boundaries of the National Park.

This is in direct opposition to the spirit behind our National Parks—that of preserving certain areas in their natural state for the enjoyment of all United States citizens.

The hue and cry in favor of the ski area development has reached such proportions that an observer would feel that everyone approved.

This appeal is written in the belief that everyone does not accept the proposal.

Can these people be prevailed upon to make their feelings known to the Director of United States Department of Interior, National Park Service, Washington 25, D. C.?

Value judgments in these times are of a superficial sort. The fact remains that "Only God can make a tree."



JULY "LOOK & LEARN" GARDEN VISITS

By SUE KELLY

I WENT looking today, to see just what was in store for the forthcoming "Look & Learners," and really saw quite an array of beautiful gardens, just waiting for visitors! Of course, when they are viewed by all our friends, they will have been groomed within an inch of their lives, but as I saw them—well, I know each of you will be as anxious to see them as I was.

Starting at 4589 Zuni Street, the Dabner garden is as restful and delightful as any you could wish to visit. Designed by M. Walter Pesman, it has those touches we all wish we could have and wonder why we don't! Redwood is used for background, benches, gates, and one of those inimitable Daisy Hastings' signs. This

garden is small but well within the average home owner's means. You'll know what I mean when you see it.

Next I went to 7645 West 48th Avenue in Wheatridge to see the Randall Gould's. In one of those new developments around the outskirts of Denver, this garden has a view that is priceless (as have the next three). Facing north is a down-drop to Clear Creek, half of which is a wild tangle of native material with running springs. The upper half has been terraced in a novel way, as described in the Jefferson County issue of the GREEN THUMB. Redwood planks have been used in a series of terraces which the Goulds use as vegetable gardens and also for growing cutting material for indoor use. Tuberous

begonias bloom on the north side of the house in the shade of the awning over the patio.

Then, on to 4260 Carr Street, Wheatridge, where Jackie and Harold Libby grow roses, roses, and more roses! Need I say more? If so, there are annuals, perennials, tuberous begonias, mahonias, a beautiful red oak, and a wonderful patio for relaxing!

From there, on to 95 S. Wadsworth, where Dr. and Mrs. Burkhardt have another of those priceless views of the mountains. Bloom all around the place, roses, and all kinds of shrubs and trees, along with those inanimate features which are used in lovely, livable gardens. A beautiful bench placed near a white weeping birch is definitely inviting, and we hope you will pause just a moment in

your busy round of affairs and come on this tour.

The Stewart garden at 400 Carr Street, Lakewood, just around the corner from the Burkhardt garden, is a must! You've all read about the wonderful design this garden shows in the Jefferson County issue, so I needn't go into too much detail here. I promise you it is well worth your while to go and see, stop — and "LOOK & LEARN." You'll thoroughly enjoy it! That's all I'll say about it here.

Last, I circled back to 3040 Raleigh Street, to see our friends, the Binderups, for I wanted to visit as well as check on the garden. I see this one quite often and have fallen completely in love with it. Not too

(Continued on Page 42)

These two pictures are from gardens shown on the May tour. Opposite page, Dr. Durrance and his tulips. Below, the Herbert Schwan front garden. Photos courtesy the Denver Post.



GROWING CACTUS AND SUCCULENTS IN NEW ZEALAND

By ERIC I. L. JONES

CACTUS and succulents are not native in New Zealand. As far as I am aware there is one *Euphorbia*, *Euphorbia glauca*, but this plant has not adapted itself to high temperatures or drought. Therefore all the varieties in the collections in New Zealand have been imported in the form of seeds and plants from other countries.

New Zealand has a Cactus and Succulent Society which is a great help and issues a monthly magazine to its members.

Although it has been eight years since I became interested in these plants, it has been only three years since I really took them up seriously. I am living in a small city port named Timaru which is about the middle of the east coast of the South Island. The garden which faces the north is about ninety feet above sea level, which allows me to grow quite a number of plants outside. It has the sun most of the day, is almost free of frost and growing the plants against a brick house is also a help as the warmth of the sun on the bricks all day helps to keep the ground warm during the night. When having a frost of about 15° the frost does not come within fourteen feet of the house so this enables me to use this part of the garden.

As the soil is heavy, sand, etc., has to be added. This allows me to grow *Opuntia* mam. monstrosa, microdasys, cylindrica, amarillo, leucotricha and quite a number of others; *Trichocereus* pachanoi, spachianus; *Kleinia*; *Agave*; *Haworthia*; *Gasteria*; *Cotyledon*; *Epiphyllum*; *Echinopsis* and *Cereus*. With all the varieties I have about 120.

I also have a small glass house 12 feet by 6 feet, which houses the more frost tender plants. At present this holds 460 different varieties, so including the outside ones I have approximately 580 varieties.

Among the plants in the glass house are representatives of the genus *As-trophytum*; *A. myriostigma*, which is 4 inches across, has flowered well this year and 12 other varieties of this genus. I have 64 varieties of *Mammillaria*. *Trichocereus*, which is 5 feet 6 inches high; *Cephalocereus* cenilis 8 inches high; *Echinocactus* grusoni 8 inches across; *Ancistrocactus*; *Aporocactus*; *Carneria*, which is only 2 inches high, and other cacti too many to mention. A few of the other succulents are *Titanopsis*, *Lithops*, *Echeveria* and *Gasteria*.

To shade the plants from the direct sun, butter muslin has been tacked up by thumb tacks which is much neater than whitewashing the glass and is more effective. This is easily removed during the colder months of the year. To prevent the temperature dropping below 45° in the winter, a small kerosene heater is lit just before sunset. The heater is not turned up too high, just high enough not to allow any fumes in the house. This keeps the temperature at about 45°, and I find that it is quite successful.

Last year I was very fortunate to have some dollars granted by the Reserve Bank which allowed me to purchase plants from Mexico. Although it took three months for these plants to travel from Mexico to New Zealand they nearly all arrived in very good condition; out of 40 only 6 were dead. The other 34 have now

settled down and have flowered two seasons running. When they arrived they had just finished flowering and flowered again without a resting period, as these plants had two summers.

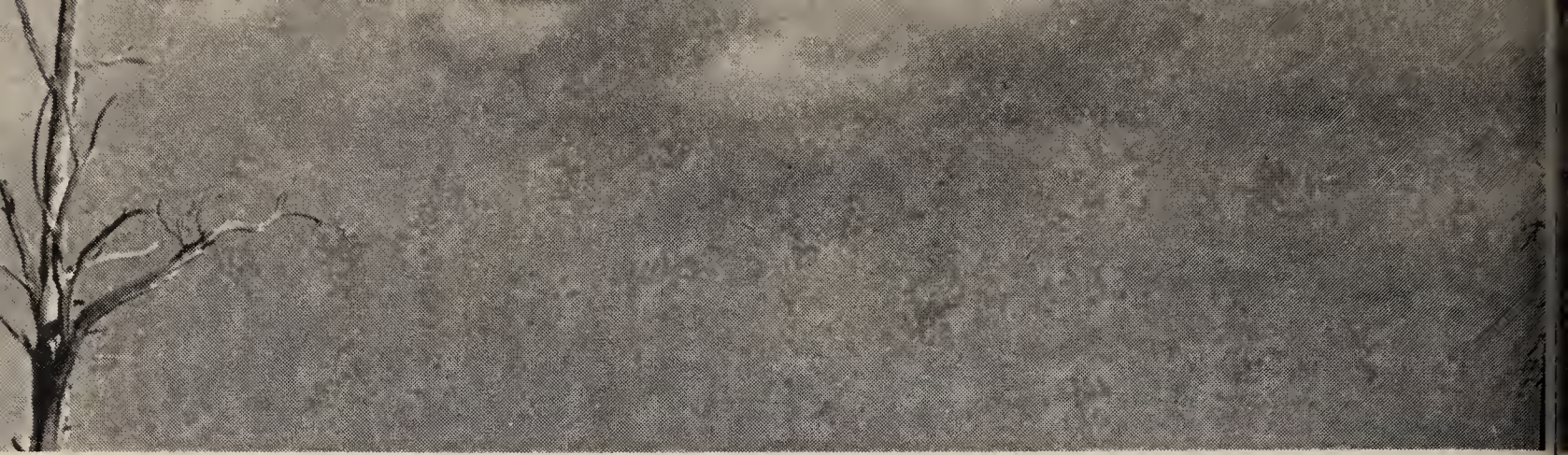
There are also growers in other parts of New Zealand who have much larger collections. This hobby is becoming very popular. Visitors to my collection do really think that these plants are the most interesting of all, not only the flowers, but the plants, themselves.

NEW MEMBERSHIPS RECEIVED

May and June, 1953

Mrs. George M. Hickey, 5140 E. Dartmouth Ave., Denver
 Mrs. R. J. Roberts, 3434 W. 73rd Ave., Denver 11
 Mr. William A. Montgomery, 1208 So. Mariposa St., Denver
 Mr. Frank Dignan, 4162 Fillmore St., Denver
 Mr. E. H. Parker, 4115 So. Pearl St., Englewood
 Col. Peter P. Salgado, 135 So. Ammons, Lakewood
 Mrs. John D. Breckon, 500 Elm St., Denver
 Mrs. B. F. Bennett, 430 No. Cedar, Colorado Springs
 Mrs. Elba Kliss, 1421 Ivy St., Denver
 Edith A. Cash, 2428 Jay St., Denver 14
 Mrs. O. W. Pitts, 2463 So. High St., Denver
 Mrs. Marmaduke B. Holt, Jr., 744 Milwaukee St., Denver
 Mrs. William M. M. Robinson, 301 Dexter St., Denver
 Mrs. Paul Johnson, Box 63, Hudson, Colo.
 Mr. Larry Pearsall, Montrose, Colo.
 Mrs. James B. Forrest, 10,030 E. Lowry Pl., Aurora
 Mr. Jack Elliott, 3330 Cook St., Denver
 Mrs. Lloyd D. Kienker, 2925 Jefferson St., Boulder
 Mr. Jack D. La Rock, 4949 Lakeshore Drive, Bow Mar, Littleton
 Mr. Joseph B. McAlpine, 3695 Poplar St., Denver

Mr. and Mrs. D. L. Sexton, Box 636, Westminster, Colo.
 Mrs. Edward N. Chapman, 124 W. Columbia, Colorado Springs
 Mrs. J. C. Strong, Jr., 635 Jasmine St., Denver
 Mr. Ted Hitchings, 1135 Jasmine St., Denver
 Mr. Ray Weed, 2237 So. Gilpin St., Denver
 Mrs. Chester Cassel, R. R. 3, Box 525, Golden
 Mrs. Edward Cody, 2999 So. Madison, Englewood
 Dr. Charles R. Thompson, 2300 Fairfax St., Denver
 Mrs. Erman D. Jones, 525 So. Whitcomb, Ft. Collins
 Mrs. W. L. Krisel, 1952 Ivanhoe St., Denver
 Mr. Paul C. von Rosenberg, 1875 So. Cook St., Denver
 Mrs. Henry Benac, Todds Trailer Park, Aurora
 Mrs. A. L. Gayer, 7361 Newton St., Westminster
 Mr. J. S. Russell, 1018 So. Columbine St., Denver
 Mrs. L. Unsicker, 4975 Beach Ct., Denver
 Mrs. O. L. Capps, 5168 Tennyson St., Denver
 Mrs. Arthur Jones, 4501 Pierce St., Wheat Ridge
 Mrs. C. F. Jones, 3241 E. Arizona Ave., Denver
 Mrs. Erma R. Miller, 815 12th St., Golden
 Mr. Wesley J. Smith, 4701 Otis St., Wheat Ridge
 Mrs. Walter L. Roper, Box 126, Hudson
 Mr. H. R. Bachman, Jr., 4141 E. 19th Ave., Denver
 Mrs. Fred Wilmer, Box 3, Hudson
 Mrs. Bascom Johnson, Jr., 1055 Clermont St., Denver
 Mr. Frederic A. Adams, 745 Marion St., Denver
 Mr. and Mrs. Thomas B. Anderson, 1418 So. Milwaukee St., Denver
 Mr. E. O. Bealer, 2765 So. Forest St., Denver
 Dr. R. C. Shattuck, 2078 Clermont St., Denver
 Mrs. G. C. Dodge, 925 Locust St., Denver
 Mrs. Dale G. Hill, 490 So. Bryant St., Denver
 Mrs. Thomas C. Baird, 1200 Cobb Blvd., Kankakee, Ill.
 Mr. Edward G. Helvenston, 1059 Troy St., Denver
 Mrs. Richard Thompson, 2001 Routt St., Denver 14



The Hail Storm As Seen From Marsten Terrace— June 5, 1953

The clouds hung low over the hills like a heavy fog and it became blacker as if an ugly smog had smeared its dirty fingers over them. We watched it creep nearer becoming lighter as it spread out with its cargo of frozen rain. The wind sprung from its hiding place and with sudden fury as if drunk with revenge it lashed out across the lake loosening an avalanche of hard white pebbles that beat them-

selves against house and windows having no mercy on flowers and growing things that an hour before held promise of beauty and harvest. Now all is still, stripped of vestments, beaten and desolate. Birds sat on the fence looking dazed and without song. This is the power and wrath of the storm gods leaving humans with all their genius and skill—helpless!

DOROTHY CLAUS.

TREES VERSUS GRASS

By HENRY GESTEFIELD

IN THE beginning, Soil, Water, Light, Heat and Air were created for mankind to exist on and live. I have wondered for a long time, and I am not sure whether or not the trees and their products and usages are really the most important. Are they the number one product of Mother Earth, or could the lowly grass be number one?

Of course, trees and bushes produce fruit, nuts, oils, shelter and the very air we breathe; also thousands of manufactured products and by-products. What about the importance of the seemingly lowly grass? Since age old Biblical times and according to old Sanskrits, flocks of sheep and cattle have grazed on grass to furnish meat, milk, clothing, oils and skin tents; and grass grains have been growing for human food. The staff of life is bread.

Products of trees and shrubs, like apples, dates, bananas, grapes and

berries seemed to be only luxuries in the older ages; but the products of grass were feed for animals to furnish meats, transportation, abodes for the earliest and the latest generations. Grain, a product of grass, is food for humans, birds, animals; also its by-products are thousands, used for the existence and survival of ALL life on earth.

So, I am inclined to agree with an article written by Mr. John J. Ingalls about grass. Here it is—

GRASS

By JOHN J. INGALLS

Next in importance to the divine profusion of water, light, and air, those three physical facts which render existence possible, may be reckoned the universal beneficence of grass. Lying in the sunshine among the buttercups and dandelions of May, scarcely higher in intelligence than

those minute tenants of that minic wilderness, our earliest recollections are of grass; and when the fitful fever is ended, and the foolish wrangle of the market and the forum is closed, grass heals over the scar which our descent into the bosom of the earth has made, and the carpet of the infant becomes the blanket of the dead.

Grass is the forgiveness of nature—her constant benediction. Fields trampled with battle, saturated with blood, torn with the ruts of cannon, grow green again with grass, and carnage is forgotten. Streets abandoned by traffic become grassgrown like rural lanes, and are obliterated; forests decay, harvests perish, flowers vanish, but grass is immortal. Beleaguered by the sullen hosts of winter, it withdraws into the impregnable fortress of its subterranean vitality and emerges upon solicitation of spring. Sown by the winds, by wandering birds, propagated by the subtle horticulture of the elements, which are its ministers and servants, it softens the rude outline of the world. Its tenacious fibers hold the earth in its place and prevent its soluble components from washing into the sea. It invades the solitude of deserts, climbs the inaccessible slopes and forbidding pinnacle of mountains, modifies climates and determines the history, character and destiny of nations. Unobtrusive and patient, it has immortal vigor and aggression. Banished from the thoroughfare and field, it bides its time to return, and when vigilance is relaxed, or the dynasty has perished, it silently resumes the throne from which it has been expelled but which it never abdicates. It bears no blazonry of bloom to charm the senses with fragrance or splendor, but its homely hue is more enchanting than the lily or the rose. It yields no fruit in earth or air, and yet, should its harvest fail for a single year, famine would depopulate the world.

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THE TRIP TO THE SAND DUNES, MESA VERDE, THE NATURAL BRIDGES AND THE NATURAL ARCHES

WHAT an experience it was for a rank outsider to be invited to join this memorable excursion. And that rank outsider was I, lucky me.

Three cars, eleven people and away we went that pleasant May morning from in front of 348 Ogden, the residence of Mr. and Mrs. Paul Timm. Residence for Mrs. Timm, but she is utterly at home in the mountains and knows the State of Colorado as she does her own backyard. Her real home is the mountains and upland valleys of this land.

On the last evening of our vagabonding, we camped in a lovely aspen grove not far from Redstone. As we sat around a campfire each person was asked to say what was to him the highlight of the trip. Came my turn and I had no doubt—Timmy's camp cooking. Others may grow poetic over the roses in Moab or the Delicate Arch in the Arches Monument, but not I. Such sights as mentioned are nice but what can compare with thick steaks or mountain trout all sizzling from the frying pan.

Sipapu Bridge in Bridges Nat. Monument.



And I ask you, has earth many greater pleasures than to be in a sleeping bag and have the scent of coffee and bacon come sweetly borne on the cool morning breeze? There's an incentive to climb out of your warm nest, huddle on your blue jeans and sweater and trot over to the campfire where Timmy is frying delectable griddle cakes. All honor to a peerless camp cook.

We had lots of eager beavers with us who shot photographs all the time which some day I hope to see. Charlotte Barbour said since I came on a trip I'd be invited to a party to see said photographs. This is a gentle nudge to keep her from forgetting.

Flowers, birds, trees, mountains, everybody knew something about one or another of these matters and the trip was an education in itself.

The Natural Bridges and the Natural Arches I'd call unnatural. They are amazing, astounding. No one can describe such scenery with words. The geological reason for the existence of these red and white striped rocks is interesting and an example of what the trained imagination can do to picture and understand the strains and stresses that produced these strange formations, these beautiful bridges leading from nowhere to nowhere or the sculptured arches big as the arches of St. Peters and placed say on the top of a bulging mountain.

The little new queen could have driven under them but how to get the gilded coach there is a problem for logistics.

Then the sand dunes where you take your hike barefooted and Mesa Verde that relic of a long departed tribe. Long did I say, only a few

hundred years and some of the rocks we saw were two hundred and fifty million years old. A pile of sandstone sixty million years old is a mere child.

We went from the sublime to the ridiculous. We saw sunrise on the red jagged rocks of the Fiery Furnace and we saw a plateful of oatmeal, bacon, scrambled eggs snowed under, white with sugar. Well, sugar gives energy and that particular camper needed it. A two hour hike before our seven o'clock breakfast was an average beginning to a day that ended with the photographer squatting on his heels, taking a picture of the campfire.

Who went on this trip? I seldom heard their last names but here is the list as I understood it:

Florence Kremer, Amy Ramsay, Charlotte Barbour, Alma Kirkeby, Sylvia Stevens, Anna Timm, Edith Whitteker, John Berrick, Vladimir Stolkovski and Clare Cashmore

and yours truly,

ROSAMOND D. McLEAN.

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JULY GARDENING

THE garden chores should be pretty well in hand by now with routine watering, cultivation and pest control the chief concerns. Maintenance of a good lawn will take a good proportion of our time. If this has been put in right with well prepared soil it should look good now. If not, we may have trouble with weeds, brown spots and foreign grass. Brown spots may be caused by spots of poor soil that prevent the water entering and so restricts root growth, or in rare cases by fungus diseases. In both cases it is well to dig in and see what condition the soil is in. If it is too poor and hard the most profitable thing is to take it all out and refill the area with good soil and reseed or sod over the bare place. If the trouble is a fungus disease it will show up as gray mould when the soil is dug up. Again the treatment is to dig out the poor soil and replace with good, first disinfecting the surrounding soil with some good fungicide like Dithane Z 78.

Learn to water only when it is needed. Dig in occasionally and see the moisture that is in the soil and you may soon learn how often it is necessary to water in every kind of soil, weather or season. Many of the old type sprinklers wasted much water from having too fine a spray or throwing too much water in one small place. Good sprinklers are now available that will water thoroughly any shape or size area or soakers can be had that will allow hard-to-get-at corners to get a good soaking without danger of washing.

Mow rather high ($1\frac{1}{2}$ -2 inches) and leave all the clippings fall that possibly can be done. New lawns and very old lawns may now need a little shot-in-the-arm of a quick acting fertilizer. Better use these at less than the recommended amount and more often. Spray the dandelions, plantain and other weeds with a 2,4-D weed killer.

Many plants, including lawn grasses and hedges will now be getting out of bounds and ragged, so learn to carry clippers with you and give a little attention to overgrown things as you work around the garden. Trim the hedges and evergreens frequently so that it is not necessary to take off much at one time. A little neatness now will improve your garden a great deal.



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If you have "wild" grass in the lawn do not expect any spray to kill it without also damaging the bluegrass. If it has fibrous roots it may be dug out and if it has stoloniferous roots you had better learn to like it for it will be with you a long time.

Weeds will be growing all over the garden now. Get them, whenever possible, when they are small and save work. Do not get in the habit of deep cultivation; just enough to get the weeds. Better yet, learn to mulch and choke out the weeds. Mulching also benefits in many other ways.

Insect and disease pests will need considerable attention now. Watch closely and catch each as it starts and before there is a chance for extensive damage to be done. Roses usually have a variety of pests so it is good practice to give them a regular shot of all-purpose spray or dust about once a week or ten days. Look for leafhoppers that suck the green out of the leaves and the leaf slugs that skeletonize the leaves. These pests may be controlled with either a sucking or stomach poison. Preparations containing Lindane seem to be preferred. Aphids are always with us but are easily controlled with one of the contact sprays like nicotine sulphate or pyrethrum. Cutter bees cut out neat circles from the leaves but are almost impossible to control. Snout beetles may sometimes be controlled by sprays such as lindane, but most good rosarians still prefer to get up at daylight and pick them off the buds. Red spidermites will often leave the under side of leaves brown and scabby looking. There are several new miticides that will give effective control, among them being Dimite, Airomite, Ovatron and the new Malathon.

Put in a little extra care on the garden now and then we may all go to the hills with a clear conscience.

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WATERSHED TREATMENT CONCEPT OF FLOOD PREVENTION

One of the encouraging trends of the times is the growing public interest in, and support for, the watershed-treatment approach to flood prevention. Conservationists long have contended that federal flood-control programs have put the cart before the horse, attempting to contain overflows—after the floods are a fact—by building huge dams on the main streams of the big river systems. This main-stream or down-stream method treats the symptoms rather than the cause. At best it can never be more than partially successful. Most of the damage from overflows accrues on the watersheds and along the smaller tributaries, although of course the damage is most spectacular where the water rolls over the lower flood-plains, inundating croplands, farmsteads and occasional towns or metropolitan areas.

“Give a man the secure possession of a bleak rock, and he will turn it into a garden; give him a nine year’s lease of a garden and he will convert it into a desert.”—Arthur Young.

“LOOK AND LEARN”

(Continued from Page 33)

large for easy maintenance, here you will find design, good material, some of those extras we all like and want! A friendly patio in back for relaxing, and a most delightful approach made up of an inviting stairway, ornamental lamp and rail, flowers and evergreens—don’t you all want to come and visit?



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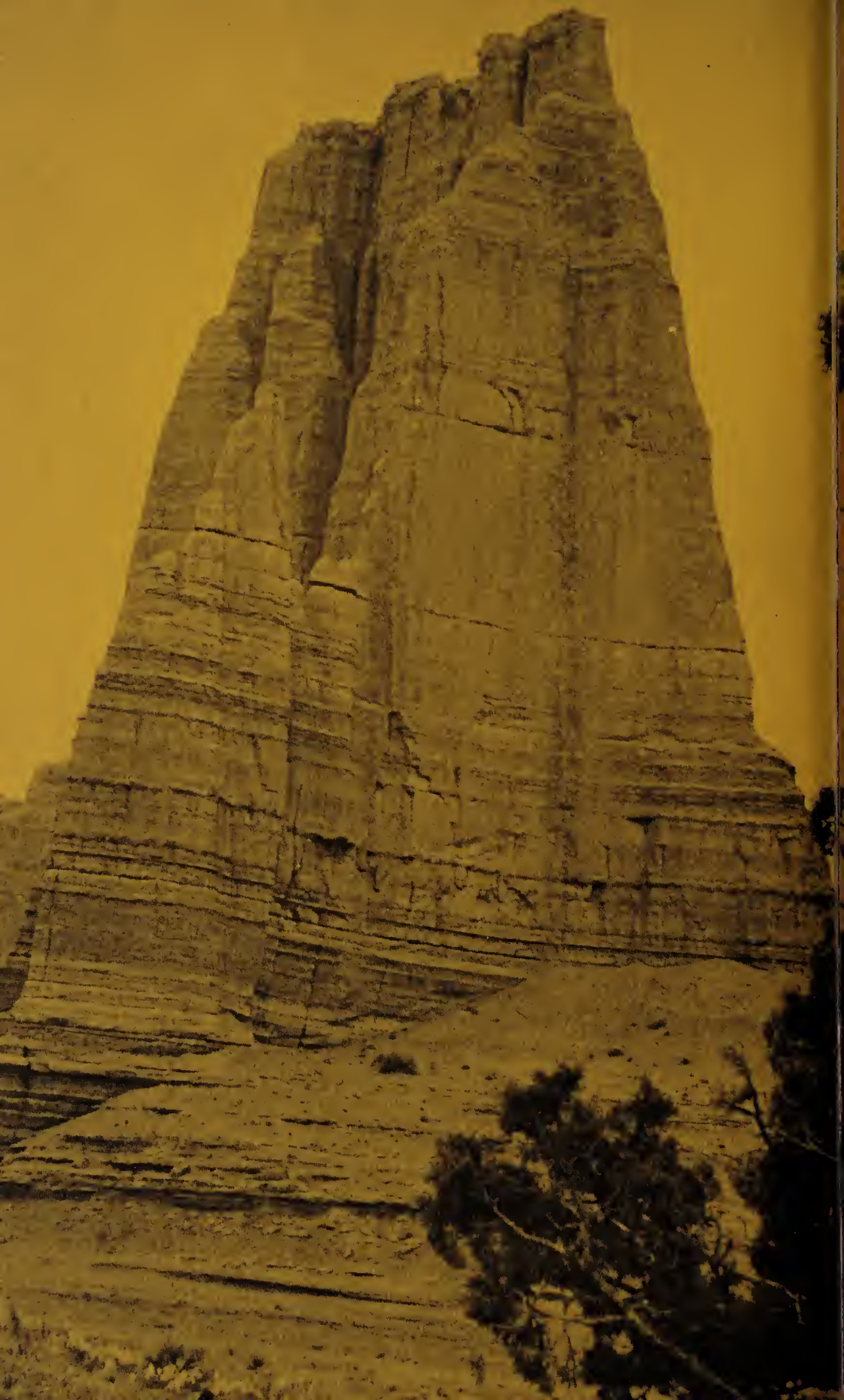
"We Need the Tonic of Wilderness"

THE picture on the back cover was taken by George and Sue Kelly on their recent trip into the desert wilderness country of Utah. This is one of the spectacular formations in Cathedral Valley a few miles north of the Capitol Reef National Monument. Few people have been into this rugged country, for the roads are difficult and unmapped. Through the courtesy of Heber and Eris Rees of Hanks-ville, Utah, the Kellys and the Binderups were permitted to go along on a cattle scouting trip and get into this wild country.

Let us hope that we in these United States will be wise enough to always preserve, unspoiled, a few of these spots of Nature's grandness as Nature has sculptured them over the centuries.

Robert Marshall in "The Land" says, "We can afford to sacrifice almost any other value for the sake of retaining something of the primitive. It is not a new idea, for Thoreau, more than eighty years ago, wrote: 'Our life would stagnate if it were not for the unexplored forests and meadows which surround it. We need the tonic of wilderness. We can never have enough of Nature. We must be refreshed by the sight of inexhaustible vigor, vast and titanic features, the seacoast with its wrecks, the wilderness with its living and decaying trees.'

"To countless people the wilderness provides the ultimate delight because it combines the thrill of jeopardy and beauty. It is the last stand for that glorious adventure into the physically unknown that was commonplace in the lives of our ancestors, and has always constituted a major factor in the happiness of many exploratory souls. It is also the perfect esthetic experience because it appeals to all of the senses. It is vast panoramas, full of height and depth and glowing color, on a scale so overwhelming as to wipe out the ordinary meaning of dimensions. It is the song of the hermit thrush at twilight and the lapping of waves against the shoreline and the melody of the wind in the trees. It is the unique odor of balsams and of freshly turned humus and of mist rising from mountain meadows. It is the feel of spruce needles underfoot and sunshine on your face and wind blowing through your hair. It is all of these at the same time, blended into a unity that can only be appreciated with leisure and which is ruined by artificiality." (Better get The Land magazine and read all of this and other inspiring stories.—Ed.)



August, 1953

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The Green Thumb

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The Green Thumb

Vol. 10

AUGUST, 1953

No. 8

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Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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Secretary-TreasurerMildred Cook
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AUGUST SCHEDULE

- Aug. 2, Sunday. Trip to Herman Gulch in good Columbine country. Leader, Anna Timm.
- Aug. 8 and 9, Saturday and Sunday. Trip to Corona Pass, overnite.
- Aug. 19, Garden Tour starting 9:30 A.M.
- Aug. 22 and 23, Trip to Jones Pass along ridge and back through Butler Gulch.
- Aug. 27, Thurs. Annual Picnic of the Association, 5 P.M. at City Park, near Museum Building. See further details elsewhere.
- Sept. 4, 5, 6 and 7. Grand Lake with trips to Lakes Nakoni and Nanita and East Inlet. Leave Friday morning.
- Sept. 12 and 13. Trip up Mt. Kelso out of Bakersville.

Register several days in advance for all trips so that food and transportation can be arranged. Call TA 3410 or PE 5565.



ANNUAL PICNIC

Mrs. McLister and her committee are planning for the annual picnic and get-together of members of the association and friends for the evening of Thursday, August 27th. All will meet, bringing a picnic lunch, just west of the museum. There will be conducted tours before eating and after if the weather permits. In case of bad weather we will be able to go in the museum and entertainment will be provided.

This location has been selected so that all can see what has been done towards the new Botanic garden and can see, on the ground, what the future plans are. Come and meet old friends and make new ones.

GEMS IN OIL

We are grateful to our friend Roland Reed for permission to use one of his sister's paintings on the front cover. Clara Messick, wife of the late Turner Messick, has a touch in her paintings which all who really know the mountains and desert appreciate. The picture on the front cover is called "Autumn" and must be seen in color to be really appreciated, for Mrs. Messick's handling of color is thrilling. We hope that everyone who knows the mountains and can appreciate how Mrs. Messick has captured the spirit of the unspoiled spots of Nature can see these paintings.

LILACS IN COLORADO

I know where the purple lilacs grow
In door yard and park, down into the plain,
By roadside and ranch house, in Colorado,
Where they thrive in its sunshine, and scanty rain.

Where the Royal Gorge splits a chasm wide,
They rival the pink of the apples bloom
With patches of lilac a purple tide,
And ravage the air with their sweet perfume.

At the foot of Pike's Peak, the lilacs grow
Bush by bush down the long city street,
There, blossoms of white distil, the peak's snow,
And the purple of flower and mountain meet.

On the dry dusty plain the lilac grieves,
Fronting a windbreak to temper the gust,
And lifts mauve nubbins above little heart leaves,
Unhappy, and drooping, and heavy with dust.

In the high mountain valleys their roots go deep,
The green waxy leaves, and buds wrapped in maroon,
Sleep late in their beds, lest the frost should reap,
And wisely withhold their blooming till June.

But the place where the lilacs love to be
Is the town where the Poudre spurns its walls,
And the earth is rich in the mountain's lee,
And the liquid note of the meadow lark calls.

With beauty they guard the gates of the town,
Lavender, lilac, purple, and white,
A grandmother bush in her lavender gown,
A hedge by the highway, lilac and white.

With clumps on the ditches, down low by the bridge,
Grape-red and cerise, and pink when it fades,
By a cabin door with a line up the ridge,
Magenta, maroon, and all of their shades.

With purple and white, the lilacs keep
Their watch, and brood in God's silent way
O'er the plot where the loved ones gently sleep;
When they bloom in the Lilac City, in May.

JESSIE B. HAMMAN



LIBERTY STATUE AT LOVELAND

WHEREVER you find an active garden club you will find a more beautiful community. The Laura Stewart Garden Club at Loveland (The Sweetheart Town) is quick to recognize opportunity and just as quick to organize and complete beautification projects.

When the Miss Liberty Statue was installed by the Loveland Boy Scouts, on the shore of picturesque Lake Loveland, the garden club was quick to make it a beauty spot. Now the statue greets thousands of tourists traveling on U.S. 34, and many of them stop to enjoy the plantings. The stop often results in a brief rest in the adjoining park and then the travelers, refreshed and relaxed, move on to the majestic rockies.

The base of the statue is a faithful reproduction of the famous Miss Liberty on Bedloe Island. In front of the statue and facing east to greet the traveler is a bed of 90 Peace roses. On the west is a bed of 60 Flori-

bundas in varying hues of red and pink. The area is completely landscaped with walks and turf; Portulaca ties the base of the statue to the picture. In early spring more than 200 Bartigon tulips border the walks and these are followed with Petunias. In winter prostrate evergreens lend their beauty to the scene.

The Laura Stewart Garden Club believes that if people are expected to help they must have a part in planning. They were quick to organize plans in cooperation with the Scouts and the Park board, just as quick to complete a money raising program for plant materials and on hand with vigor to do the planting.

(Author's Note: Many historical markers dot Colorado's roadsides. Each of these markers tell an interesting historical story. Thousands pass these markers every day, but few stop. Has a turnout been provided? Has the area group up in weeds? Is the area planted and maintained?)

THE TREE THAT SAVED ITSELF

By J. V. K. WAGAR

Colorado A & M, Ft. Collins, Colo.

FIFTEEN years ago I abandoned a young limber pine to whatever fate might befall it. I expected that someone soon would cut it. Or, uncared for in a region with only fifteen inches of moisture, it would soon die. But through the years this tree has pleased one person after another, and lives today.

This limber pine was planted in the old Forestry Department arboretum at Colorado A & M College. Records do not show the date. Students and staff who planted it on some forgotten Arbor Day have dispersed. In 1938, the narrow lane along the north side of the arboretum was widened into a broad street. To save them, we moved most of the trees to a spot distant from the juggernaut of what men call progress.

Nearly one hundred trees of species unusual to the region were moved.

Hardy trees in duplicate were sold to a Wyoming rancher. Ordinary trees of large size were cut. Only this limber pine was left standing beside the widened street. I lacked the heart to cut it, and it was too large for our equipment to move.

The limber pine is fairly common in the high forests of Colorado, but must be planted here on the semi-arid prairies fringing the foothills. Its vigor enchants people, whether growing on rocky ridges near timberline, in a windbreak in the Forest Service nursery at Monument, Colorado, or wherever it is placed. The Forest Service does not replant old "burns" with the tree, for a five-needled pine it succumbs to the white pine blister rust. The Park Service protects it as a part of the local scene by destroying shrubs of the genus *Ribes*, which are alternate hosts for the rust.

The old arboretum became an experimental garden for the Horticulture Department. Upon taking over, Dr. Louis Bryant asked if we would move the lone limber pine. They'd need to cut it to use space it occupied. But they didn't! Then Roosevelt National Forest officials for a time considered establishing a housing project for forest officers transferred to Fort Collins. Plans evolved to move the limber pine to the proposed premises, but the plan faded and the tree still stood.

World War II came. Students who knew the tree, fought in far lands. Some never returned. The tree grew slowly. It was untended and unwatered except by storms and moisture which escaped other uses. As veterans returned to the college, Veter-



an's Village was built just west of the tree, and a trailer village just south. Village streets of packed gravel pressed hard against the limber pine, and their alignment showed that the tree again had won friends. Veterans and their children each Christmas season filled the tree with gay lights.

I visited the tree again this morning. Cars and luggage trailers were parked above its roots. Great earth-moving machines roared and panted nearby as they, in turn, tore the horticulture gardens into a pattern needed for a new dormitory. Workmen told me that the gravel roads which had swerved to miss the tree must yield to paved streets which will extend the rectangular city-street system. The tree at last may be cut.

"How futile!" you may exclaim. "You might as well have cut the tree fifteen years ago!" No—children will remember Christmas lights in the tree and its shade during hot days in an area where there was not time to grow other trees. Those of us who teach the beauty and wonder of trees never could meet all who learned to know this tree. Surely it not only saved itself for these many years, but taught people to treasure other trees wherever they grow.

CONSERVATION IN THE STATE LEGISLATURES

From *Conservation News* (June 1, 1953)

To hear him tell it, everybody is strong for conservation. Yet the battles that have to be fought for sound natural resource management in almost every legislative assembly—state and federal—lead to two sobering conclusions: (1) Too many citizens aren't interested enough to sound off on the subject, and (2) many politicians pay lip service only to the cause.

ACCIDENTAL BLEEDING HEARTS

By JESSIE B. HAMMAN

It was when a little boy ran a lawn mower into my cherished Bleeding Heart, dripping with its little red pendants in the first year of full bloom, that I made a discovery that has been the source of one of my chief garden joys.

As I sorrowfully picked up the crushed and broken stems, I considered them, hating to throw away anything so beautiful. I noticed that some of them were broken off at ground level, and even had a bit of root skin hanging. Would they grow, if planted? I'd try them, anyway. I pruned them and set them deep in the earth, watering well. They did grow—some of them, at least. By the next spring, I had three new bleeding hearts, and to my surprise, they even bore a few blossoms that first year.

Each year now I set some stems, and this is my method. As soon as the parent plant is large and bushy and full of bloom, I select an outside stem, and break it off at ground level with a downward thrust of the thumb in order to get a bit of root if possible. Then I snip off the blossoms, prune the big leaves entirely, leaving one or two small ones. The stem is then set six inches deep into the soil, and watered well. I keep it damp all during the growing season. A new growth will appear in the axils. Later in the summer it will die down, just as the parent plant does, so it should be marked until it has established its growth the next spring.

Now, my garden drips with little red hearts during all the spring months, and by setting some stems each year, I always have some to share with the friends who always "wanted a Bleeding Heart."



FORT COLLINS GARDENS

The four outside pictures on these pages from the garden of Miss Elizabeth Propp, 828 Peterson, Fort Collins. Delphiniums,



Oriental poppies and roses were in their prime when these pictures were taken. Vegetables also had their place in this fine garden. The gadget shown above to the left is an idea worth passing on to other gardeners. A tin can cut in half makes a place to keep the sprinklers and nozzles.

Beautiful pool shown in center picture is on the grounds of the Fort Collins Municipal Light Plant.



STRAWBERRY TRIALS AT COLORADO A & M COLLEGE

CARL JORGENSEN

Associate Professor in Horticulture

PROBABLY no one fruit is as popular with the average gardener as is the strawberry. Its ease of planting, care and high productivity per square foot of area all help to give it appeal, not to mention its toothsome goodness. Yet here in the Rocky Mountain area, no small fruit presents more problems. Our heavy, highly alkaline and poorly drained soils are not adapted to most varieties now commercially available.

In order to develop strawberries well adapted to our soils and climate, a strawberry breeding program was inaugurated at the Cheyenne Horticultural Field Station several years ago by Dr. Leroy Powers and Dr. A. C. Hildreth. This breeding program first involved collecting thousands of native Rocky Mountain strawberry plants all up and down the Rocky Mountain chain and the planting of these individuals in a mother block at Cheyenne. Then from the most promising of these natives, crosses were made on cultivated varieties commercially available. All the tools of the plant breeder came into play. Inbreeding, double crossing, backcrossing and outcrossing finally resulted in hybrids worthy of screening. These were given numbers and set out in blocks in 1947 in order to test for that type of winter hardiness essential for survival in the Great Plains and Rocky Mountain region. During the winters of 1947, 1948, 1949 and 1950, many of the hybrids failed to come up to the standard of hardiness set by the breeders, and these were discarded. It might be interesting to note that two of these winters were

exceptionally hard on all plants and were thus welcomed by the breeder. Also, one summer produced a devastating hail, yet the good selections came back. The hundreds of selections had now been narrowed down to less than a dozen. Way back in the collecting period, it was noticed that some of the wild strawberries had the everbearing habit, others did not. Fortunately the breeders were able to save good selections of both everbearing and June bearing sorts. They were now ready to test these on a wider scale.

At this point, Colorado A & M College came into the picture. We had been watching the trials at Cheyenne with intense interest, and when Dr. Powers offered to include our experiment station along with those of Nebraska, Montana, Kansas, and Minnesota in his tests, we were more than anxious to cooperate. Twelve plants of each of the following were planted in the spring of 1951.

JUNE BEARERS

Numbered hybrid	Parentage
49316	473x478
49304	474x473
49293	476x473
49264	474x473

EVERBEARERS

49130	473x478
49105	473x478
49103	472 selfed
4931	473x479

In addition to these 8 selections, three earlier introductions were also planted, namely Cheyenne 2, Cheyenne 3 and Sioux. Then in order to

compare these selections with varieties available commercially, we purchased plants of 26 other named varieties from nurseries in Eastern United States, and these were set side by side in our trial plots here on the Colorado A & M Campus. The soil is a heavy clay loam, with a high alkalinity and not well drained. These plantings are not mulched over winter and receive no irrigation water from August 1 to May 1. When irrigated, the area between the rows is flooded.

In 1952, production records were taken on all 37 varieties. The leading ten were as follows:

Variety	Production per 100 ft. of row
49293	55.80 quarts
Kardinal King	44.40 quarts
49130	44.30 quarts
Sioux	42.10 quarts
49264	40.40 quarts
49105	37.20 quarts
49304	36.00 quarts
49316	34.80 quarts
Redrich	32.00 quarts
4931	32.00 quarts

It is of more than passing interest that 8 of the top ten were Cheyenne selections. Perhaps even greater production might have resulted had it not been for a destructive hail on June 26 which terminated our test for that year.

The 1953 production records have just been completed. Hot dry harvest weather, late freezes and the defoliating hail of last June all combined to reduce drastically the total production for 1953. Eight varieties were either dead or dying at the beginning of the harvest period, and no records were taken on them. The top ten in order of production were:

Variety	Production per 100 ft. of row
Kardinal King	30.98 quarts
49293	25.53 quarts
49264	25.00 quarts

49304	24.05 quarts
4931	21.55 quarts
Late Giant	21.44 quarts
Cheyenne 2	18.45 quarts
Sioux	18.13 quarts
Arrowhead	16.93 quarts
Evermore	15.56 quarts

Again six of the top 10 were Cheyenne selections. They might have shown up even better had it not been for the fact that as a group they are earlier to bloom and produce than most commercial varieties, and blossoms were nipped by late freezes this spring. This probably accounts for the better showing of Late Giant which last year was hit by hail at its peak and which this year missed the late frosts.

I have purposely avoided reference to quality of berry until now. We all enjoy the intense flavor and sweetness of a wild strawberry. This characteristic unfortunately is largely lost when

The many varieties are planted side by side and receive identical care. Here the variety Robinson stays in and Catskill disappears.





A healthy plant and one suffering from root-rot, the most serious trouble confronting Colorado strawberry growers.

we increase the size of strawberries. We thus have to compromise between size and quality in nearly all cases. The emphasis at Cheyenne has been on quality and hardiness rather than size. The home gardener too is more interested in quality and high production than in berry size. Taste panels have been conducted on several varieties here at Colorado A & M and the Cheyenne berries have rated tops. Kardinal King, Late Giant, Robinson, Redrich and Evermore all have larger berries but lack high quality. Kardinal King is a very attractive berry of large size and may have commercial possibilities.

Since trials at Colorado A & M are actually only applicable to a small area of Colorado, it is desirable to extend these trials over a much wider area. At this writing, we have 4 co-operators who will be giving 20 of the better varieties trials under their conditions. One such planting will be at Julesburg, two in the Denver area and one near Meeker. It is hoped that we may find others interested in trials in their areas of the Rocky Mountain West.

Two of the most destructive diseases of strawberries under our soil conditions are root rot and red stele. Every year during or just prior to harvest, we receive many inquiries rela-

tive to strawberry plants wilting and dying. In many cases, the plants have appeared healthy up to that time and then suddenly large sections of the patch show these symptoms. The reason is simply the death of functioning roots from these rots. The advent of hot weather and the added burden of fruit production are just too much for the already weakened plants. No sprays or soil treatments will prevent the disease. Our only hope lies in the breeding of resistant varieties or in supplying our plants with soil conditions less favorable for the rot organisms. Most of the Cheyenne hybrids and many of the new commercial varieties show varying degrees of resistance. Under lighter textured and well drained soils, these varieties should stand up well. One of the very best ways for the home gardener to avoid many of the usual strawberry problems is to grow his strawberries in pyramids. This is not a new idea but an excellent one. The right soil and proper drainage can be provided. An area of 64 square feet of ground space will hold 100 plants. The pyramid can be made a garden feature. Furthermore, runners are more easily kept under control, berries easier to pick and the area not too large to cover with wire netting to reduce bird or hail damage. Further information on how to build, plant and care for a strawberry pyramid can be obtained by writing the Horticulture Department, Colorado A & M College and asking for Circular 2202 entitled "The Strawberry Pyramid".

Strawberry pyramid at home of Dr. N. E. Howe, Fort Collins.



LARIMER COUNTY GARDENS



The pictures above and below were taken in the new garden of Mr. and Mrs. Lee C. Kent, in Wellington, Colo. Three pictures on the right are from the beautiful garden of Mr. and Mrs. H. G. Jordan, 428 W. Laurel, Fort Collins. In this garden we found over 300 roses in full bloom.



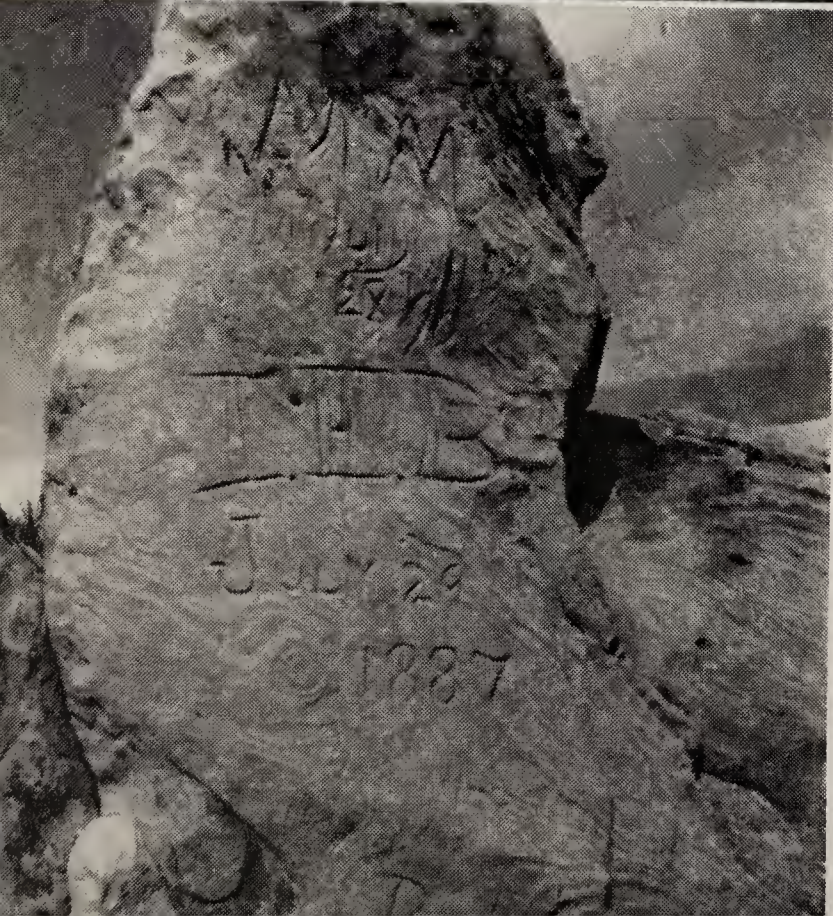


THE OLD ROCK FORT

This a group of fantastically eroded rock formations which were first used as an emergency fort by the Indians as far back as 1831 and later as a shelter for the pioneer wagon trains and still later as a picnic spot.

Occasionally arrowheads and flint chips are still picked up in this vicinity and remains of the old pioneer and buffalo trails are still visible.

Upper, left picture shows the remains of one of the old rock walls that connected two of the main natural rock outcrops and made a comparatively safe enclosure for pioneer wagon trains. Left, center shows Chas. Drage and Sue Kelly exploring these old ruins. Left, below is one of the many sets of dates and initials found all over the rocks. This one appears to be old and authentic. Right, above, is one view of the "Cliff of Faces", and below is one of Nature's carved castles.





WHAT DOES COLUMBUS HAVE THAT WE DON'T HAVE?

THE following extracts from a story entitled "The Rose Capitol of America" should be of interest to all who believe that the establishment of parks, rose gardens, arboreta and such are a profitable project for any progressive city. The story was written by Eugene W. Rosebrook (very appropriate name), Asst. Supt. Parks and Forestry of Columbus, Ohio, and published in "Parks Maintenance" magazine.

We may learn much from a few of the objectives and methods given in the extracts following.

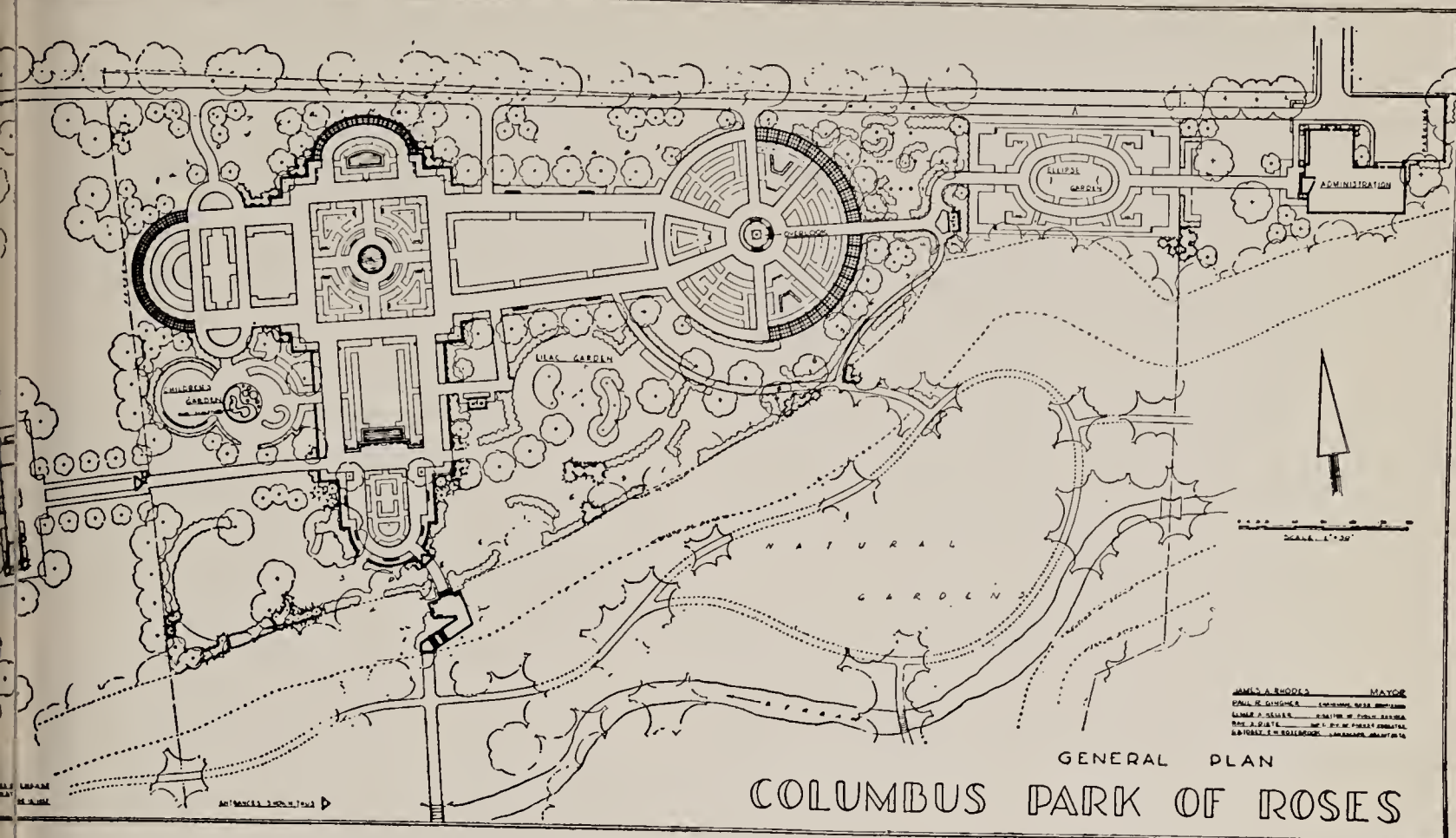
When a progressive city administration makes up its mind not only to build the largest public rose garden in the country but also to point toward the establishment of its locale

as the "Rose Capital of America" the eyes of many thousands are immediately focused upon it.

For many years the pleas and organized efforts of the amateur rose growers of central Ohio went unheeded and a financially crippled city was not in a position to sponsor expensive projects of an aesthetic nature. A change in city administration brought on a completely new approach to financial problems and the citizenry of Columbus recognized ability to the extent of backing progressive measures of civic improvement by bond issues totaling millions of dollars.

The public voted a city payroll tax to aid in meeting expenses. Soon business and industry began to flock





to locate in this fast growing capital city of Ohio.

The goal is to have 50,000 roses planted when the gardens are completed. Every known type and species available on the market will be given a chance to be represented in the Park of Roses. All varieties will be labeled for educational purposes.

Costs of Construction

Two separate bond issues were voted for the construction of the Park of Roses. The first, for a total of \$80,000, was set up to build the administration building, and a service and storage building, and to provide protective fencing around the garden and woodland ravine area designated as part of the park.

The second was for \$125,000 to provide funds for garden construction contracts and labor, purchase of 50,000 rose plants, purchase of additional landscape plant material, purchase of pipe for a water garden system and crushed stone for the walks and drives, purchase of dimensional

redwood lumber for arbors and benches; purchase of spray materials and fertilizers; and for miscellaneous items of necessity.

Additional features of this garden are:

1. The American Rose Society will move its national offices to a newly built office building on park land and adjacent to the test garden. Pleasant working relationship between the parks administration and that of the Society is anticipated.

2. The sesqui-centennial of the great State of Ohio is being celebrated in 1953, and dedication of the Park of Roses in September is to be a prominent feature of that celebration.

3. The National Rose Show is scheduled for Columbus in September, and the Park of Roses will provide the setting for that show which will attract outstanding rose growers from every state.

4. A policy has been adopted to provide for an admission charge for the Park of Roses. Family membership cards will be sold to the local

and visiting public who wish to act as sponsors of the continued progress of the gardens. It is intended that the Park of Roses should be self-supporting as a result of admissions and memberships.

5. The Columbus Municipal Rose Commission is an advisory group of public spirited citizens appointed by the mayor for terms of office. These persons are dedicated to the success of the Park of Roses and fully believe in the popular local slogan which reads "Come to Columbus and Discover America."

We have confidence that success of this large project will be assured after a year or two of hard work. That success will more than justify

the expenditure of public funds in providing Columbus with an attraction worthy of national attention. That success also can encourage other cities to provide funds for horticultural gardens suited to their climate, and thus raise the standard of beauty and its appreciation throughout the nation.

To many of us the crowded city would become an unbearable place if it were not for the opportunity occasionally to get out where the air is pure and where close contact with the good earth as God created it helps restore our sense of values.

RANDALL HENDERSON
Desert Magazine

GARDEN TOURS—EAST AND SOUTHEAST

Wednesday, August 19, 1953, 9:30 A.M.-5:00 P.M.

By SUE KELLY

I spent one of the most delightful mornings I have known in visiting the gardens listed under this heading on the August LOOK & LEARN GARDEN VISITS, sponsored by Horticulture House! As you will see them at their very best, and most "groomed", let me assure you that they are just that when one drops in unexpectedly—and from that you will infer (and rightly) that these gardens are definitely well worth your time to "look and learn"!

The Brunhobers, 3601 S. Ogden Street, Englewood, were delightful to see me, and thrilled with the thought that you would all come to visit them in August. From their garden you will get ideas on what to do with a southern exposure, a steep slope, some native material, and at

the bottom of the slope, an irrigation ditch problem! An impossible situation for gardening, you say—come "LOOK & LEARN"!

The Harry Hanks, 624 E. Vassar, Englewood, have practically the same situation, but here again, you will find ingenuity, maintenance, and good design have put in telling touches. I think you will agree it well worth the trip to southeast Denver to see these two.

Several of these gardens were new to me, such as the Wheelocks, 60 S. Cherry Street and Collins, 5315 Montview Boulevard. The Wheelocks have a new garden. Good material and wonderful maintenance is at once apparent, as you enter. A tall hedge, screening the alley and utilities, forms a background for the ra-

ther formal features as seen from the patio. The Collins' garden is in an older neighborhood, but, such a peaceful, cool retreat is seldom found giving shade and welcome coolness after hours in the broiling sun. A fenced patio gives the visitor a sense of privacy so that all street noises are shut out and you just want to stay.

After visiting the above gardens I still had three more, and I enjoyed them immensely. You all know the Kohn's garden at No. One Eudora, with its clipped hedges enclosing nearly a half block. This is a **MUST**, so take your time here and see it all.

Mr. and Mrs. Fiske, 750 Pontiac Street, have a garden that will certainly appeal to many of you who want a garden with very little maintenance. If I told you just what I meant, you wouldn't go to visit and then you'd be the loser.

Azaleas — hardy azaleas — which bloom and stay outside all year 'round is what you will find at Dr. and Mrs. Wearner's! I know that sounds incredible, but go see for yourself! They live and garden at 330 Albion Street, and while you are there, don't overlook the begonias, the varnish tree, Koelreuteria, and the rock garden on the north side of the property.

I envy you all—for you certainly will enjoy these gardens as much as you did the others this year. Incidentally, if you know of any gardens which you think we should visit, won't you tell us about them, so that they may be visited by all our **LOOK & LEARN GARDEN** guests? We would also like to know what your impressions of these visits are, and how the tours may be improved. Are you getting your money's worth? We'd really like to know whether you think these visits are worthwhile and educational, as well as a joy to visit! See you all, Wednesday, August 19!

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WHY MAKE COMPOST

By MRS. JAN SCHOO

THE WHY is no longer a problem. Every "Green Thumb" gardener knows: "Good soil is the basis of all good gardening." He knows, that good soil is not a dead material, is not just "dirt"—but a most wonderful part of life, is itself full of life, containing, besides the bigger forms of life: insects, maggots, worms, etc., millions and billions of soil microbes, bacteria, protozoa, fungi; microflora, algae, yeasts, etc.; soil organisms so important for plant food and plant life. It is estimated that in the upper seven inches of an acre of soil the weight of the minute forms of life might average four to eight hundred pounds. They act upon finely ground rock particles; clay, granite, quartz, gneiss, sandstone and upon partially rotten vegetable and partially decayed animal matter. They produce chemicals and with the aid of carbon dioxide, hydrogen, oxygen and water; they unlock the resources of the soil: phosphorous, potassium, nitrogen, sulphur, calcium, iron, magnesium and trace elements such as boron, iron, copper, nickel, fluorine, iodine, manganese, etc. They decompose and convert organic matter; fallen leaves, withered plants, animal droppings, carrion, changing these unavailable, raw materials into soluble, inorganic (and organic) compounds and available plant food. For their mysterious life and work they need plenty of organic—plant and animal—matter. They make and live in HUMUS. Humus is furthermore valuable because it has many other very important functions. Humus has great moisture absorbent capacity, making the soil loose, porous and easily workable. As plants drink the plant food, moisture in the top soil is essential for them. Humus absorbs several times its own weight

of water, holding it in the soil and releasing it to plants as they grow. The amount of water used by plants is very great. It sounds almost incredible when we hear that for one pound of dry matter of corn about 250 pounds of water are used; for potatoes about 350 pounds; for clover about 550 pounds. Humus protects soil from overheating during the day and overcooling at night. It prevents inordinate changes in soil temperature, serving as regulator and moderator. It also acts as a soil conditioner, binding sandy soils and loosening clay soils. It hampers runoff in heavy rainfall; keeping the soil surface from packing or puddling. It is one of the factors that prevents the destructive erosion by wind and water and the forming of dust bowls and gullies.

Humus maintains a thriving earthworm population, valuable because of their burrows for the drainage and aeration of the soil and valuable because of their casting, which are a rich plant food. Their beneficial action goes much deeper than any man-made spade or plow or rototiller. This type of soil working and conditioning is of great value in the garden and earthworms should be left alone whenever possible.

Soils are often made poor by depleting their supply of the humus through mismanagement or the failure to obtain and add manure. With the growing scarcity and its rising cost, gardeners have been too prone to rely upon chemical fertilizers for the needed plant food and to neglect to provide any other kind such as organic matter and humus. Actually it is comparatively easy to do this in several inexpensive ways, by growing catch, cover crops—green manure; by using stable manures; and making

compost.

Two facts should be emphasized, one, soils should be thoroughly prepared by the application of humus, and two, surface mulching with organic materials is a valuable practice. Every gardener should have some out-of-the-way place where a pit, pile or pen, to make compost, is available; it can be done in a few months when the right methods are used.

CARE OF YOUNG EVERGREENS

From Shade Tree Digest

Those evergreens you planted this spring or last fall,—are you sure they are not in need of a little attention? Recently transplanted evergreens,—or any newly planted tree or shrub species, for that matter—usually need a bit of extra care to enable them to survive that critical first summer. The process of transplanting, regardless of how carefully it may be done, constitutes a weakening shock to the plant involved from which it will not recover until its root system is firmly established in the soil of the new location. This may require a year or longer. During this period the plant is likely to succumb to adversities which, normally, would not be fatal.

A proper amount of water is one of the major needs of a newly planted evergreen. Too much water will kill it, particularly if the sub-soil is clay and the drainage poor. It is more likely to suffer, however, from lack of water. It is usually good practice to water new plantings twice a month regularly during the first summer. During drought periods once-a-week watering may be necessary. The soil in the root zone should at all times be moist, but not wet. If in doubt, dig down with a narrow spade, or use a soil auger, and exam-

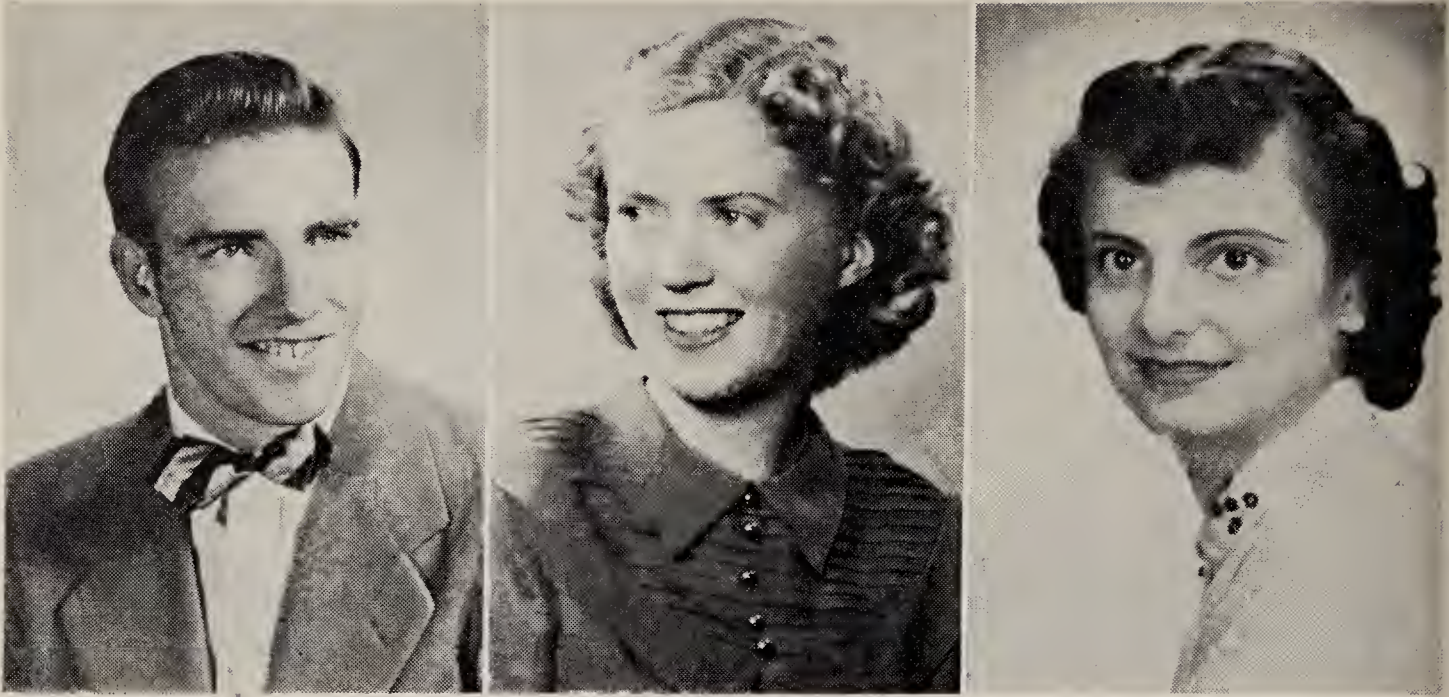
ine the soil near the roots for its moisture content.

Most evergreens are subject to attack by red spider mites and other sapsucking insects. Since newly set plants are likely to suffer severely from these pests, they should be inspected frequently and insecticides applied at the first signs of infestation. Red spider mites may be detected readily by holding a piece of white paper beneath a "suspect" branch, and then tapping the branch sharply. If the branch is infested the mites will drop to the paper where they are easily seen as they move about.

CARE OF POINSETTIAS

By ALICE L. COLLIER

The question these days—What to do with a poinsettia? For a long time I have been keeping them over until last June I set 14 in the ground. This winter they have well paid me with a glorious red window. When the plant is through blooming it is ready for a long rest. I put it in a big cool basement, 55 to 60 degrees. It will get very dry. Give it a drink occasionally so that it doesn't dry up altogether but not to start growth. When June comes, cut back the top leaving a stump 3 or 4 inches. Turn the pot upside down and shake off all loose dirt, being careful not to injure the roots. If too crowded put into larger pot replacing the soil with leaf mold if possible—then dig a hole in your garden large enough to take pot and cover out of sight. In a few weeks you will find new growth. Feed the plant twice during summer and water as you do your garden. In September, bring into the house gradually. I set them in a long pan of wet sand on the west window sill. They take a lot of water. They are budded by Thanksgiving and lovely at Christmas.



OUR GREEN THUMBERS OF TOMORROW

By CHAS. M. DRAGE

Extension Horticulturist, Colorado A & M College

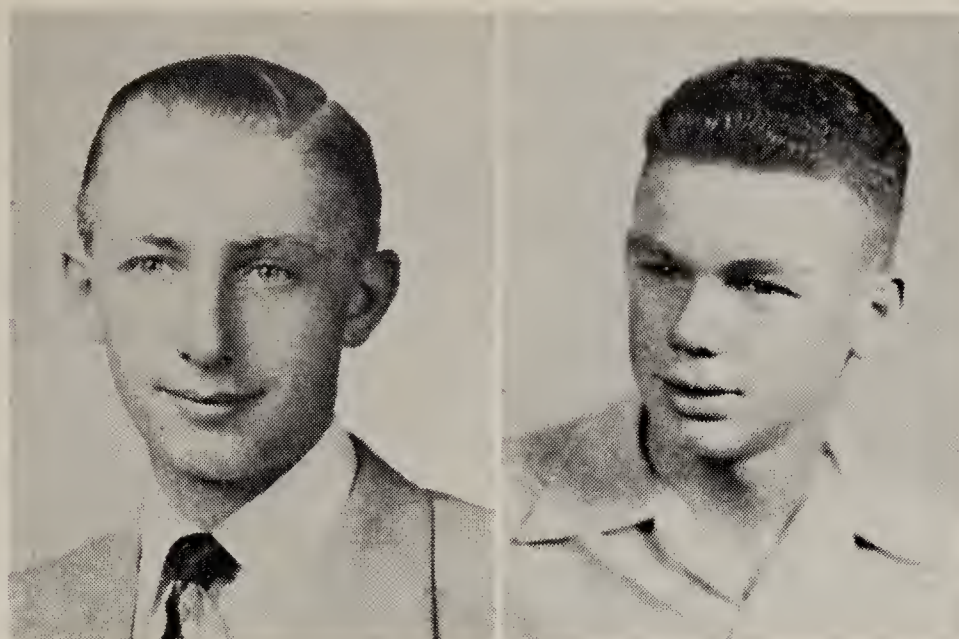
IT IS no longer news when Colorado young men and women bring recognition to Colorado by winning national horticultural honors. However, such news speaks well for the future of horticulture in the State; it also indicates the good work being done by well-informed, unselfish adult leaders most of whom serve voluntarily because they are interested in Colorado's finest and most valuable crop, our boys and girls.

In the last six years Colorado 4-H Home Beautification club members have won four national championships and each of the four winners received the all-expense trip to the National 4-H Club Congress held in Chicago where they were honored. In the last eight years Colorado 4-H Garden club members have won the National Garden Championship seven times; each of these winners received the all-expense trip to the National Congress and, in addition, a \$300 National Scholarship.

The year 1952 was a banner year when our Colorado boys and girls in

horticultural projects almost made a clean sweep nationally. Warren Seamans, RFD 2, Fort Collins, was declared a National 4-H Garden champion. John F. Duggan, Box 244, Adams City, won a National 4-H Home Beautification championship. Miss Nadine Thompson, 1041 Carr St., Lakewood, won the National Championship in the Production and Marketing Contest sponsored by the National Junior Vegetable Growers Association; her award was a trip to the National Convention held in New York City and a \$500 cash scholarship. This is the first time the national championship has been won in the Western States. Miss Thompson is now studying at the University of Beirut in Lebanon, but we look for her to come back to Colorado this summer.

Glen Delventhal, RFD 1, Brighton, won the Regional N.J.V.G.A. Championship; his award was a trip to the national convention in New York and a \$200 cash scholarship. There is only one regional championship avail-



able in the eleven Western States. Miss Mary Sue Williams, RFD 2, Box 658, Pueblo, won a Sectional award in N.J.V.G.A. and a \$100 cash scholarship; there are only three available for the Western States. Mary Sue Williams and Joe F. Genova, RFD 1, Box 129, represented Colorado at the National Convention of the N.J.V.G.A. in the Demonstration Team Contest. They placed second in the Production and Marketing Division in this contest.

Those from Colorado who attended the N.J.V.G.A. Convention in New York City, which was held in December, were Miss Thompson, Miss Williams, Glen Delventhal, Warren Seamans, Joe Genova, Mrs. John Williams and Assistant County Agricultural Agents Bruce E. Young, Adams County, and James H. Doyle, Pueblo County.

Without a doubt the adults who are making the awards and trips possible and the adult leaders who train our boys and girls in leadership and achievement will wear many stars in their crowns. This glowing account of national recognition and achievement leaves a sad thought when one thinks of the thousands of boys and girls who miss the opportunities to participate because of the lack of adult leadership in the communities.

DON'T DEPEND UPON ORGANIC GARDENING TO CONTROL PESTS

It would be pleasant to say that a good prospect of pest and disease control is offered by organic gardening, but it would be far from the present truth. No gardener questions the importance of organic matter as an essential ingredient of fertile soils, and scientists will concede that minute but unidentified fractions of humus in the soil may play an important part in plant nutrition. However, the present evidence is overwhelmingly for essential inorganic nutrition of green plants, i.e., living entirely on minerals, water, and carbon dioxide. But to claim that merely by exposing plants to a super dose of organic matter in the soil they can be practically immunized against all kinds of parasites is fantastic. Plants in virgin forests suffer from diseases and pests. Parasitism has existed in nature about as long as life itself, and was highly developed before man appeared on this planet and made "poisonous" chemical fertilizers. Besides, some parasites prefer healthy and vigorous plants to weak and sickly ones, will scarcely infect the latter even when inoculated, but will attack the strongest plants one could grow.—Freeman Weiss, of Montgomery County, Md.



GARDENER AND PUPIL

The two pictures on this page and two lower ones on the page to right are from the very livable garden of Clair Robinson. He has been dealing in plants in the Denver area for many years, and, contrary to tradition, has developed his own garden in a most charming way. He loves and uses naturally weathered flagstone and enjoys planting shady nooks. It is interesting to note the similarity in the picture at the upper, right of a garden developed by his pupil, Richard Ohrendorf, to the original as shown at upper left.



VERMICULITE AS A SOIL CONDITIONER

Contributed

"Texture or 'feel' of soil is determined by the proportion of particles of different sizes. But the particles also cling together in groups, as anyone can see by picking up a handful of soil. The sizes and shapes of these groups and their resistance to breaking down make what is called the structure of the soil. It is now known that structure plays a large part in the productivity of different soils, affecting the ease with which roots can penetrate, the rate of absorption and movement of water, and resistance of soil to erosion. It is just as important to maintain good structure as to maintain good chemical balance. Granular and crumb structures are the best for crop plants."

So says the U. S. Department of Agriculture's book "Soils and Men," regarded by soil chemists as the basic text on soils.

Good soil is porous in structure, holds plenty of moisture, and contains so much air that the plant's roots never lack for oxygen. One of the purposes of soil conditioners is to loosen and aerate the soil so that it will hold more water and air.

The U. S. Department of Agriculture in Beltsville, Md., was the first to introduce expanded horticultural vermiculite as an important inorganic soil conditioner. Vermiculite is one of the mica minerals. When expanded at about 2000° of heat, the ore particles enlarge to about 15 times their original size and become very lightweight and fluffy. A four cubic foot bag weighs only 24 pounds.

Mixed into the soil, this porous material acts like a sponge in trapping moisture, which it releases very slowly as water evaporates from the soil's surface. The millions of air cells that interlace every vermiculite granule assure that the all-important oxygen

can get to the plant's roots. This dual action of trapping water and making the soil lighter and more granular is why vermiculite is effective as a conditioner of both sandy and heavy clay soils. Plants grown in vermiculite have longer, sturdier roots and more of them, capable of supporting strong, heavy top growth.

Vermiculite is also an effective insulator. It reduces heaving of the earth from alternate freezing and thawing, which is a major cause of root injuries. In summer it keeps the soil cool by preventing the blistering heat of the sun from penetrating. It reduces caking and crusting of the soil's surface, which shuts off the oxygen supply to the roots.

Horticultural vermiculite is not a plant food, but recent studies by the University of California have established that it has pronounced base exchange properties. Briefly, this means that it makes food in the soil more easily available to the plant and tends to reduce leaching.

WEED KILLERS TO THE RESCUE

By E. K. ALBAN,

Ohio State University

(Excerpt from *Horticulture*, April, 1953)

There is no better weed control measure for lawns than the maintenance of a good heavy stand of the desirable grasses. Thus a good fertilizer program plus high cutting of the lawn will be the eventual answer for lawn problems of any gardener. A well established, vigorous lawn will readily compete with most weeds. A poor stand of close cut grass will always need a weed control chemical.

"Makers of Beautiful Gardens"

Roy E. Woodman and Bros.

Landscape Gardeners and Nurserymen

Denver, Colo.

SPruce 5509





MY MAKINGS TRAY

By DOROTHY M. WAGAR

IF only I had the right wire and ribbon I'd make a corsage of you and wear you this evening. How many times have you walked into your garden and felt just so about some lovely bloom or cluster of autumn leaves? Why not make a corsage tray and be ready?

Assemble the "makings" in some kind of easy-to-handle container. I chose the flat basket pictured which probably started life holding bottles in a nursery or carrying cold drinks on a hot day. It came to me as a May basket from a very small friend. As a holder for my corsage makings it is perfect.

The little edge holds things in, yet is low enough to make them easy to see, take out, and replace. The jars were selected for size from the fruit shelves and had their lids painted green. In them I put wire, pins, ribbon supplies and corsage vases. The low handle, attached lengthwise to the basket, keeps it steady when carried and is a good place to tie bows that are ready for a quickie, or for bows that are still fresh and can be

reused. Red plastic, snap clothespins hold parts of hanks of ribbon that might be crumpled in a jar, and pin a corsage bag to the handle in readiness for a gift corsage.

You may want to use a tray or pretty box for your "makings" and either will serve you well. But if you allow your friends to tempt you out to share your corsage-making with little groups of them, you will be glad for the handle.

Well, good luck, happy hours, and I hope I'll see you wearing a corsage some day soon.

Architects dream is your profit. Very interesting three bedroom house, with lots of garden space, in beautiful Bow-Mar. Modern, but built right. Someone who appreciates this kind of house can buy it at cost. See it at 5005 Larkspur Drive. Phone AC 2767.

OVER 160 VARIETIES

By S. R. DE BOER

There are now over 160 varieties of trees and shrubs in the Denver Botanic Garden. In addition to the Keegan's Lilac Lane, there are now also 30 varieties of flowering crab apples. These are the following:

- 1 Malus purpurea aldenhamensis, 8-10', deep purple
- 1 Malus almata, 15-20' purple
- 1 Malus atrosanguinea (Carmine), 10-12', carmine red
- 1 Malus cutleaf (toringoides)
- 1 Malus arnoldiana, 12-15', pale pink
- 1 Malus double chinese (spectabilis), 15-18', double pink
- 1 Malus echtermeyer, 10-12', weeping, purple
- 2 Malus hartwigi, pink
- 1 Malus jay darling, 15-20', purplish-red
- 1 Malus katherine, 10-15', double pink
- 1 Malus lemoinei, 12-15', purplish-red
- 1 Malus magdeburgensis, 15-18', pink
- 1 Malus makamik, 10-15', purplish-red
- 1 Malus marshall oyama, 15-18', pinkish-white



- 1 Malus nieuwland, 10-15', rose-pink, double
- 1 Malus sargent, 7-8', white
- 1 Malus wabiskaw, 20-25', purplish-red
- 1 Malus irene, 5-6', red
- 1 Malus ioensis tres
- 1 Malus ioensis palmeri
- 1 Malus floribunda
- 1 Malus fusca
- 1 Malus micromalis, 12-15', white
- 1 Malus robusta erecta, 12-15', white
- 1 Malus brevipes, 8-10', white

All these have come through the planting process in good shape.

One of the great charms of the Botanic Garden is the collection of big spreading American Elms growing there. In the development of the Gardens they will be carefully preserved.

Michigan "Pete"

Your Garden Helper says:

**DON'T LET HOT
SUMMER SUN DRY
OUT GARDEN SOIL
OR BURN LAWNS**



Mulch with rich dark brown

MICHIGAN PEAT



- Conserves moisture
- Keeps soil from crusting
- Eliminates need for cultivating
- Gives neat, tidy appearance
- Adds valuable humus to soil

for ORDERS or
further information

MICHIGAN PEAT

853 St. Paul

Denver, Colo.

When Fall comes . . .
convert your lawn to

MERION Blue Grass

Dark green, spreads fast, grows thick



GARDEN WOES THAT CRAWL

By HERBERT GUNDELL

NINETEEN fifty-three seems to be a year in which home and garden insects are bothering us in exceedingly large numbers. Several insects have provoked much interest lately and are causing home gardeners and home owners much concern.

Those that are of particular nuisance this year are earwigs, pillbugs, ground slugs and red spiders. Together they seem to gang up on unsuspecting home owners and really scare them.

Earwigs are insects that are much feared because of a common mistaken belief that they crawl into ears of sleeping persons at night. This is not true! Just the same they are little, annoying and dangerous looking home and garden pest. They are brown, about $3/4$ inches long and have a pair of forceps-like protrusions at their rear end. They cause some damage in the garden and injure young shoots of vegetables and flowering plants. They will also eat the stamens at the base of the blossoms, and will feed on flies and larvae of other insects, therefore, their garden injury is less serious than the benefits which they bring about by their existence. They annoy home owners by entering dark places at night and hiding under cushions, clothing or in small crevices in floors and walls. A 3% Chlordane dust will control Earwigs in the home without exposing the family to undue damage. In the garden they can also be controlled with Chlordane, Toxaphene and various other stomach poisons.

Pillbugs, or as they are sometimes called, Sawbugs, are normally found in damp ground, shady places, under stones and other plant refuse. They feed at night on decaying plant ma-

terial and roots and are really not too dangerous as a garden pest. Quite often they can be found under boards or in wet basements. Chlordane or D.D.T. dust as well as toxaphene or similar garden stomach poisons are recommended for the control of Pillbugs. They are another insect that is more annoying than economically important. When they are found under boards or stones it is well to move the boards and stones to allow the soil to dry. That will discourage Pillbugs to a large extent.

Ground Slugs are soft, slimey animals varying from brown to black and usually about an inch long. They have no legs and leave behind a slimey secretion. They feed largely on leaves at night. They lay their eggs usually under boards and rubbish and the young slugs hatch in late April or early May. They are particularly hard on seedlings and young plants, but can be controlled very effectively with Chlordane dust, D.D.T. dust, Toxaphene dust, or even lime. Lime should be used with caution as it tends to increase the alkalinity of western soils.

Red Spiders are mites that attack most any vegetables, flowers, trees, evergreens and small fruits. Due to the rather indiscriminate use of D. D. T. in the past few years, the spider population has increased considerably. On evergreens, red spiders can often be held down during the hot weather by applying a hard cold stream of water. Once the spiders have been dislodged from the evergreen they will not come up again. When temperatures do not go above 75 degrees, it is advisable to dust evergreens with sulphur dust to protect them from red spiders. This should generally be done in autumn and spring. In the

garden red spiders can also be controlled successfully with a spray of wettable sulphur at the rate of one tablespoon per gallon of water. Some of the newer insecticides such as Lindane, Methoxychlor and Malathion promises to be useful in the control of red spider mites.

APHIDS ON SMALL PLANTS

From Shade Tree Digest

Nearly every living plant is a potential food source to aphids. Fully mature shade trees, ornamental shrubs, perennials and annuals in the flower border, and even the small rock garden and ground cover type plants are likely to be attacked by these pests. There are a great number of species of aphids, no two exactly alike. In general, they are delicate, soft-bodied insects, 1/4 inch or less in length, winged or wingless, and variously colored,—white, gray, bluish, green and black.

All aphids feed by inserting their beak-like mouthparts through the outer covering of leaves, twigs, branches, and in some cases, the roots, and sucking the sap from the inner tissues.

Their feeding causes loss of color and wilting of the foliage, and generally retarded growth of the plant. Often, the edges of infested leaves curl or roll inward toward the midrib, or variously shaped growth, known as "galls," form on the affected portion of the host plant. One of the most familiar of these growths is the "Cocks-Comb Gall" commonly found on the leaves of aphid-infested elms.

To control aphids contact insecticides must be used. Well known effective insecticidal materials include nicotine sulfate, rotenone, and pyrethrum. The home owner who wishes to treat his flowers, rock garden

plants or similar vegetation against aphids, should follow carefully the manufacturer's directions given on the packaged insecticide. He should remember always that the old cliché, "If a little is good, a lot is better" does not apply when using insecticides.

Large trees may become so heavily infested with aphids that control measures are highly desirable. Spraying or dusting equipment normally possessed by the home-owner, and which may be perfectly suitable for use in treating infested small shrubs or flowers, is not powerful enough to distribute the insecticidal material throughout the top of tall trees. Such operations require the services of a specialist in the field of tree insect and disease control,—one who has both the knowledge and the equipment adequate for the job at hand. For such work your arborist is available.



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Soil Fertility Is Essential to Tree Growth

Your shade trees and ornamental shrubs won't grow properly unless they have plenty of food. While the actual "food" that the tree or shrub uses to produce all the tissues that make up its crown, trunk and roots is manufactured in the leaves, essential to that food-manufacturing process are the raw ingredients derived from the soil. These ingredients consist of nitrogen, phosphorus, potassium, iron, calcium, magnesium, sulfur, boron, copper and others. The function of some of these elements in the life and development of a plant is well-known; the role of others is

less clearly understood. It has been amply demonstrated, however, that if a soil is deficient in these nutritive elements, plants growing thereon exhibit symptoms of poor health.

The raw food materials drawn from the soil by trees, shrubs and grass must be replaced if the plants are to continue in vigorous health. Under natural conditions this replacement occurs through the decomposition of fallen leaves, twigs, branches, and other organic matter that may accumulate on the soil surface. In lawn areas where, in the interests of "good housekeeping" and the elimination of breeding places of insects and diseases, organic matter cannot be allowed to accumulate, the replacement



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must be made by artificial means.

This is generally accomplished by introducing periodically into the soil fertilizer materials containing the elements needed for plant growth. There are numerous methods of applying the fertilizer; the method used is largely determined by soil conditions and other local factors. Similarly, the type and condition of the soil, the species of tree or shrub, its age, its general state of health and other factors determine the frequency with which fertilizer applications should be made. In some cases fertilizer should be applied annually; in others, an application made every two or three years is sufficient to keep the trees or shrubs involved in good health.

The greatest amount of tree growth occurs during the spring and early summer. Fertilizer applied just prior to the growing period will be reflected in more luxuriant foliage, stronger branch growth, and better tree health generally, throughout the summer months.

From the *Shade Tree Digest*.



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THE DENVER CHAMBER OF COMMERCE BELIEVED IN CONSERVATION IN 1909

By FRED R. JOHNSON

William A. Hover, a life member of the Colorado Forestry and Horticulture Assn., died at his home in Long Beach, Calif., on Nov. 19, 1952, at the age of 96. Mr. Hover, a resident of Colorado from 1879 until his retirement some years ago, was the founder of U. S. National Bank, Denver, and of a wholesale drug house, bearing his name. He was active in civic affairs and had been a life member of the Colorado State Forestry Assn. for fifty years or more.

In 1944 he sent to the Association a copy of a report of the committee on Forestry of the Denver Chamber of Commerce of which he was chairman. Other members of the committee were Zeph Chas. Felt, F. J. Chaimberlain and General Irving Hale, all of whom were also members of the old State Forestry Assn.

This report dated Jan. 27, 1909, reviews criticisms of the Forest Service and of National Forest policy during the preceding year. It tells of the public hearings the committee held to examine charges made against the Forest Service.

In conclusion the committee upheld the National Forest system, stating

that, "it is only through Federal supervision that anything like uniformity of action and administrative methods can be obtained, that are absolutely necessary to preserve these resources for the benefit of the greatest number." The report further stated that the paramount consideration is the conservation of our National resources.

This 13-page printed report is now a valuable historical document in the Association's library. It is of special interest now in view of reports that certain vested interests are starting a movement to turn over these vast timber and range resources to private ownership.

Mr. Hover was a strong conservationist and maintained an interest in the Association and its program for many years.

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AUGUST GARDENING

IF a garden has had reasonably good care up to this season it should be able to get along with less care now. At this season you will appreciate the earlier planning for hot weather bloom. Now, we appreciate the perennial Phlox, the Zinnias and the old standbys, the Petunias. We also appreciate planning for architectural features that do not depend on bloom for their attractiveness.

A good gardener should be able to take time now to look around other people's gardens and get ideas from them for improvement of their own. Go to the mountains and look for ideas in plants and arrangements of plants. Just off the beaten trails there are often many nice spots that Nature has arranged.

Do not relax your earlier vigilance entirely and watch for the stray insect and weed that is capable of multiplying rapidly a little later. Learn the habits of each pest so that you may develop the most efficient control practices.

This is the time of year when you will appreciate all the time you spent earlier improving the soil and applying mulches. Don't try to make up for all neglect in the preparing and care of soil by applying fertilizer. All plants need a fertile soil and often surface applications may profitably be made, but a little something sprinkled on the surface can never cure all past neglects.

When you feel that you **MUST** do something in the garden, get out the clippers and do some clipping here and there—that lilac limb that lops over the walk, the perennial stems that are dried and gone, the tree limb that junior swung on and partly broke off, the rampant stem of Bush Honeysuckle that is crowding the symmetry of the Winged Euonymus and the dead limb on the peach tree. Give the hedge another haircut and nip back, here and there that too vigorous Pfitzer Juniper. Edge up the lawn where it is growing under the shrubs and cannot be cut with the mower.

Plants will require a lot of water during these hot days. If they have been trained earlier by only watering as they need it, and then thoroughly, they should get along well now. Along towards the last of the month it is well to ease up on the watering and fertilizing program to allow the woody plants to thoroughly ripen their new wood before danger of frost.

Now is the time to move or thin or plant Oriental Poppies. Even a small piece of root will often grow if moved now. Some species of lilies are dormant now and may be moved if necessary. Tulips and narcissus can be lifted and reset now if there is any reason to do so. So long as they are blooming well leave them alone. If dug and separated it is not necessary to leave them out of the ground, but they should be replanted at once.

Get ready this month to seed new lawns or reseed old ones. Work the soil up deep and mix plenty of peat or some coarse organic matter with the soil. Sometimes rubbish, plaster and worthless subsoil will be found which should be completely removed. If the lawn area is prepared now, leveled off and watered many of the weed seeds in the soil will sprout, then they may be eliminated before sowing the grass seed in September. At least half the time and expense in putting in a lawn should be given to preparing the soil.

O. K., now let's go fishing.

Pictures on back cover of buildings on the campus of the Colorado A & M College at Fort Collins. Above Administration and below Agriculture. Colorado A & M photos.



September, 1953

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The Green Thumb

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September, 1953

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PRESIDENT'S COLUMN

THE Association is undertaking three new projects of a public nature. These projects were proposed by Mr. S. R. De Boer. They were carefully considered by the Board, were approved, and we are now in the process of lining up committees for the necessary studies and reports.

They first propose a program of tree and other ornamental planting on the Denver-Boulder turnpike, also in the new Denver-Castle Rock-Colorado Springs-Pueblo highway. These are new roads of the finest design and construction, but which need planting to keep them in line with the scenic values of the State. Also in places planting is needed to insure the stabilization of the soil. M. Walter Pesman has agreed to serve as chairman of the committee which will study this problem.

A second committee is now being formed to study the much needed extension of the park system of the Denver Metropolitan area, including the Denver Mountain Parks. The city has practically doubled in population during the past twenty years, whereas the area of parks has practically remained stationary. Look at the crowds in any of Denver's parks on Sundays and holidays, and the need for their extension is evident. Mr. De Boer has agreed to act as consultant in the study that this committee will undertake.

The third committee will study plans to promote the systematic planting of the new additions to Denver. Thousands of new homes, many in monotonous rows, have been built since the end of World War II. Not much has been done in landscaping many of these homes, and in some cases poor trees have been planted, such as Chinese elm. Would it be possible to get some neighborhoods to

agree on uniform planting, such as the south Denver area which planted Linden trees only last spring?

It cannot be handled by city ordinance since most of these homes have the sidewalk against the curb and there is little or no parking over which the city has jurisdiction. In other words any plan would have to be worked out cooperatively with the individual neighborhoods. Anyway this committee will try to see what can be done along this line. Kenneth Wilmore will serve as the chairman, with George Stadler as vice-chairman.

We are looking for talent to assist in these worth while public service projects. Here is an opportunity to learn something and at the same time help metropolitan Denver. George Kelly, the committee chairman or I will be glad to discuss the projects with anyone interested.

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"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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SEPTEMBER SCHEDULE

- Sept. 9. 8:00 p.m. Meeting of the Organic Gardening Club.
- Sept. 12 and 13. Climb of Mt. Kelso via Bakerville. Leader, Bill Reed.
- Sept. 20. Work Picnic at Mrs. Barbour's cabin, seven miles below Bailey on the Estabrook road. Coffee and sandwiches served. Leave Horticulture House at 8 a.m. The leader is Mrs. C. Barbour.
- Sept. 26 and 27. Camp at Lilah and Al Lampe's cabin. Saturday evening at dusk drive to Trail Ridge road to hear elk bugle their mating calls. Leaders, Lilah and Al Lampe.
- October 4. Hall Valley, over ridge to iron deposit pools. Leader, C. Barbour.

Foresters Will Meet at Colorado Springs

The annual meeting of the Society of American Foresters will be held at Colorado Springs, September 14-17, with headquarters in the Antlers Hotel. About one thousand professional foresters from all over the United States and Canada are expected at this meeting, the first time that the Society has met in the Rocky Mountain Region.

The general theme of the meeting "Nature on Edge" will be discussed by 70 speakers. They will cover the forest resource situation in the West, particularly the related problems of

land and water utilization.

The program will include a general session, 11 technical sessions, three field trips to interesting places in the Pikes Peak Region, two dinners, one an outdoor chuck wagon dinner in the Garden of the Gods.

Foresters and friends of forestry, whether or not they are members of the Society, are invited to attend.

OTERO COUNTY ISSUE

We are very grateful to Mrs. A. R. Ormsbee for acting as assistant editor and assembling the material for this issue.

Aphids of The Rocky Mountain Region

By MIRIAM A. PALMER

This new book, recently received for the library at Horticulture House, has been many years in the making.

It gives descriptions, with many drawings and colored plates, of practically all the aphids (plant lice) likely to be found in North America. Miss Palmer has spent almost a lifetime in studying these pests of plants and has here given to all others the result of her work. Those especially interested in these insects will want a book for their own and others may refer to the book in the library at Horticulture House. We very much appreciate Miss Palmer sending us this book.

OTERO COUNTY.

By MRS. A. R. ORMSBEE

OTERO County lies in the heart of the Arkansas valley, midway between the state line and the mountains. The climate of this area is both the delight and the despair of its gardening inhabitants. It is a delight because of the mild dry winters; the early, tantalizing springs; and the long, mild autumns, which sometimes last until after Christmas. It is a despair because the very conditions which make it so pleasant to live here make it very difficult to garden here. The winters have little snow, the springs are three months of alternate freezing and thawing, the summers are very hot and dry (probably the hottest in the state), and the autumns stretch on and on until the gardener become frantic trying to follow George Kelly's rule about watering well before the first hard freeze.

In addition to the climatic difficulties, we have a heavy clay soil, which is really good for only one thing—adobe bricks. And besides all this, we have the most alkaline soil in Colorado, a condition which cannot often be alleviated because most of us must use alkali water to irrigate with. It is no wonder that the newcomer soon becomes discouraged and decides that it is a hopeless task to try and garden here, for we have all the difficulties of Colorado gardening in an acute form.

After several discouraging attempts, the newcomer either gives up in despair, or looks around and tries to find out what is the matter. Fortunately, there are some successful gardeners here, who by many years of hard work and experiments have discovered the rules that we must follow. And also fortunately, these successful gardeners are kindly, generous persons who are more than

willing to share their knowledge with us, to offer encouragement and advice.

Probably the most important rule we must observe (especially if we are just average, amateur gardeners) is to use only the hardiest of plant material for the back bone of a planting. We must forget so many of the lovely things that are considered hardy in other areas. Even some of the plants which will grow easily in other parts of Colorado will not endure our alkaline soil. Lists of hardy plants are now available from Colorado A & M at Fort Collins, and from Horticulture House in Denver (have been published in "The Green Thumb" several times.), so we have a great advantage over the pioneer gardeners who had to learn so much by trial and error. This does not mean that we cannot experiment a little, but for the most part we must rely on those plants known to be hardy. Even though the list is limited, we still can have variety and color. Whenever in doubt about a plant, we have many experienced gardeners who can advise us.

The next important rule we must learn is to improve the soil. We should constantly try to incorporate humus into our clay soil. We can leave arguments over the relative merits of the different kinds of humus to others; any kind of humus is beneficial here. For the new homeowner a green manure crop would be invaluable even though it delayed the planting of the garden for a year. For others peat moss, barnyard manure, leaves, grass clippings, sawdust, wood ashes, sand, vermiculite, anything that will loosen the soil is helpful. A compost pile is a necessity, and whenever a spadeful of dirt is

turned some humus should be worked in.

Watering is a year around chore. We rarely get enough spring rain and must begin watering the first warm days. During the hot, dry summers it is especially important to water thoroughly, for shallow watering can be fatal. We probably use more water per garden than any other area in the state. During the long autumns we have to get the hoses out regularly, and sometimes even in the winter we have dry spells that would kill or damage the plants if they were not watered. We must also guard against another danger—chlorosis which comes from too much alkali water.

In spite of all these difficulties we do have some excellent gardens, including one which is listed with the American Rose Society and contains over seven hundred beautiful roses. And because we have to work so hard for our little spots of green, perhaps we appreciate them and love them more than do you who live where gardening is easier.

SOME OF THE THINGS I DO IN GROWING BEGONIAS

GUS A. WORKER
Rocky Ford, Colorado

In the fall we go to the mountains and get leaf mold or compost from under the aspen trees. In March, I plant begonia bulbs concave side up in flats that are four inches wide and four inches deep, in the compost just as it came from the mountains. I do not completely cover the bulb. I put them in the basement where the temperature is about sixty degrees. I keep them moist, but not wet.

After they have grown to about four inches, I bring them up to a

glassed-in porch where they lose their tender, fragile look, take on a green color and become more hardy. This toughening is necessary before they are put out-of-doors.

When danger of frost is past, they are planted out-of-doors. I prepare my bed by filling in with compost, the same good mountain kind, to a depth of about six inches. In setting out the plants, I use a pancake turner, carefully lifting them to the bed with the soil intact. After planting, I cover them with about one inch of finely pulverized cow manure.

I grow my begonias on the north side of our garage where they get the full early morning sun. It was necessary to make some protection for them so I made frames from old window screens covered with onion sacks. These allow some sunshine to filter through. When the begonias are again in the shade, I remove the frames. I water them every evening using a fine spray. After they start blooming, I avoid getting water on the leaves or blossoms as it spots them. The plants need daily moisture, but it is important that they have good drainage. Preparing the soil as I do, makes for a porous mixture and therefore good drainage.

Last year (1952) we had plants twenty-four inches high and a lot of blossoms, some measuring seven inches across.

I purchase new bulbs every year, also using some of the bulbs from the previous year. I have better success buying bulbs from growers who specialize in begonias.

Gordon Mickle, Colorado Extension Entomologist, informs us that: Now is the time for control of clover mites which will be coming into the houses. Spray lawns and shrubs with sulfur — one-fourth pound wettable sulfur to five gallons water. Follow directions on container.

ROCKY FORD GARDEN CLUB

By CHARLOTTE B. FENTON

AMONG groups of women here, the question was always being asked, "Why don't we have a garden club?" So, finally, in March, 1950, a group got together and organized the Rocky Ford Garden Club with 29 charter members, which has met regularly since then on the first Tuesday morning in each month. We are fortunate in having two members who have large basement recreation rooms where we hold our meetings. We now have about 40 members and average attendance is about 22.

We have a number of good gardeners in our group who have been responsible for many programs of interest. We have had a few programs of colored slides furnished by commercial firms, and we are extremely fortunate in having Mrs. Oliver Steele as one of our members—fortunate, in that Mr. Steele is an excellent photographer and they both have brought back many films from the many trips they have taken. Mr. Steele always manages to take a few "extra" ones just especially for the Garden Club.

Each year in late spring, we have a plant exchange and in July and August an iris exchange. We charge a small amount for these plants as a means of raising money for our club. We have a drawing of members sold at 10 cents each at each meeting and the winner of the lucky number receives a dollar gift; something pertaining to gardening. She, in turn, is responsible for bringing the gift to be drawn for the next meeting.

During the summer and again at Christmas time, we have breakfast meetings. Any money from these above actual expenses goes into the club treasury. Following the summer breakfast, we go on an informal gar-

den tour of some of our gardens. After the Christmas breakfast, we have an exhibition of Christmas decorations already made up and a demonstration of how to use various greens and other material in making such decorations.

We are also fortunate in having Mrs. Claud Marshall as one of our members, and we have had many delightful "coffees" with her when we have gone to her lovely garden in tulip time and later on at rose time.

In a civic way, we have planted some iris in our Play Park recreation area; have assumed the planning and running of the Flower Show each year at our Arkansas Valley Fair; have been responsible for the landscaping of our two new elementary school buildings; and, at the completion of our new hospital this coming spring, have been asked by the Hospital Board to work with them in landscaping their grounds. We also have plans made for doing some planting in two triangles at the highway junctions as soon as the city can complete the curbing for them.

CLEMATIS

By GUS A. WORKER
Rocky Ford, Colorado

We have three different kinds of clematis growing in our yard. The *C. henryi*, which has huge white flowers measuring seven and one-fourth inches across, is a beautiful blossom. It blooms in early June. We have a *C. montana undulata* which has a smaller blossom than the *C. henryi* and is light pink in color and blooms later. The other one is the older and more common variety, the *C. jackmani*, which is velvety violet-purple.

(Continued on Page 11)

ROCKY FORD FLOWER SHOW

By MRS. PERRY E. WILLIAM

THE Rocky Ford Garden Club was organized in March, 1950. That September they held their first annual flower show. It has been held annually since.

The purpose of the Flower Show is to create interest in gardening, flower raising and arranging.

It is held at the Arkansas Valley Fair Grounds in Rocky Ford in conjunction with the annual Fair each September.

A window in the Empire State Bank building is decorated to call attention to the flower show and the

trophy is exhibited. The trophy is a Sterling Silver Vase. Any one exhibitor winning the trophy three consecutive years wins it permanently.

The entire area is invited to exhibit and we have had entries from Fowler, Manzanola, Ordway, La Junta and Las Animas.

The Flower Show is to be held again this year and anyone interested in exhibiting flowers is invited to bring them to the fair grounds on Wednesday morning, September 3, between the hours of 8 and 10.





THE STEELE'S "FLOP HOUSE."

THIS rather undignified name has been attached to a guest cottage built by the Oliver Manufacturing Company on the outskirts of Rocky Ford. The Oliver Manufacturing Company is owned and operated by Oliver and Hazel Steele and was founded in St. Louis in 1930. After 18 years in the crowded city, the Steeles decided to move their plant to the wide open spaces and they purchased 50 acres at the intersection of highways 71, and U. S. 50. Soon customers, their agents, and their friends, started visiting the new plant and the problem of overnight accommodations became rather acute, especially during the tourist season when local commercial accommodations were difficult to obtain.

Many other companies in similar situations have built customer accommodations. These accommodations are usually tourist type cottages built near the plant and are made very comfortable. Such accommodations build good-will as the customer usually arrives after a long drive and a good place to rest is fully appreciated. Further, this close personal contact goes a long way toward building a friendship with the customer which competitors find hard to break.

The Steele's problem was solved by wrecking an old barn and using the reclaimed lumber in their guest cottage. They first planned a simple "tourist cabin" with the usual bathroom. But the Steeles like to start the day early while many of their customers like to sleep late. A small completely equipped kitchen and dinette was attached to the bedroom. Then another thought came into the picture, why not a lounging room where a pleasant evening could be spent? This presented a real problem.

Just outside the kitchenette were two beautiful ash trees which could not be sacrificed for the new lounging room. But this problem was quickly solved by building around the trees. Their trunks are in the house and their wide spreading limbs shade the roof making the guest cottage one of the coolest buildings in Rocky Ford.

Around one of the trees is a glass top wrought iron table. Placed around this table are six solid brass stools which were obtained from the old Harvey House at La Junta. One visitor remarked that when she came to La Junta over forty years ago she had her first breakfast seated on one of these brass stools.

The Steeles are quite extensive travelers and their journeys take them to the seed producing areas of our country, and to many foreign countries. Both are avid souvenir collectors and they collect almost everything that strikes their fancy. These souvenirs are used for decorations throughout the house. Being well known to the art colony at Taos, New Mexico, they have collected small paintings of their Taos artist friends. The well-known wood carver, Andy Anderson, is a particularly good friend and a glass case has been built into a partition wall to house the Anderson comic carvings. The assembly is a sort of diorama of Anderson's famous "Shot-gun Weddings". All visitors enjoy a good laugh when they see this collection and it goes a long way toward breaking down what little dignity the visitor might bring with him. In fact, the Steeles have given considerable thought toward the quick elimination of formalities. The house is even furnished with old cast-off furnishings, but all pieces are very comfortable. A wagon wheel has been made into a table and another wheel is used for the center lighting fixture. A number of old music boxes on wrought iron stands present quite a contrast to a television set. Old guns play a part

in the decorations and even the trim of the room has been made from the old barn with its weather-beaten red paint. Anyone suddenly introduced to such surroundings instantly feels "at home" which is just the way the Steeles planned it. And to eliminate the last degree of formality, the Steeles have attached the rather undignified name of "The Flop House".

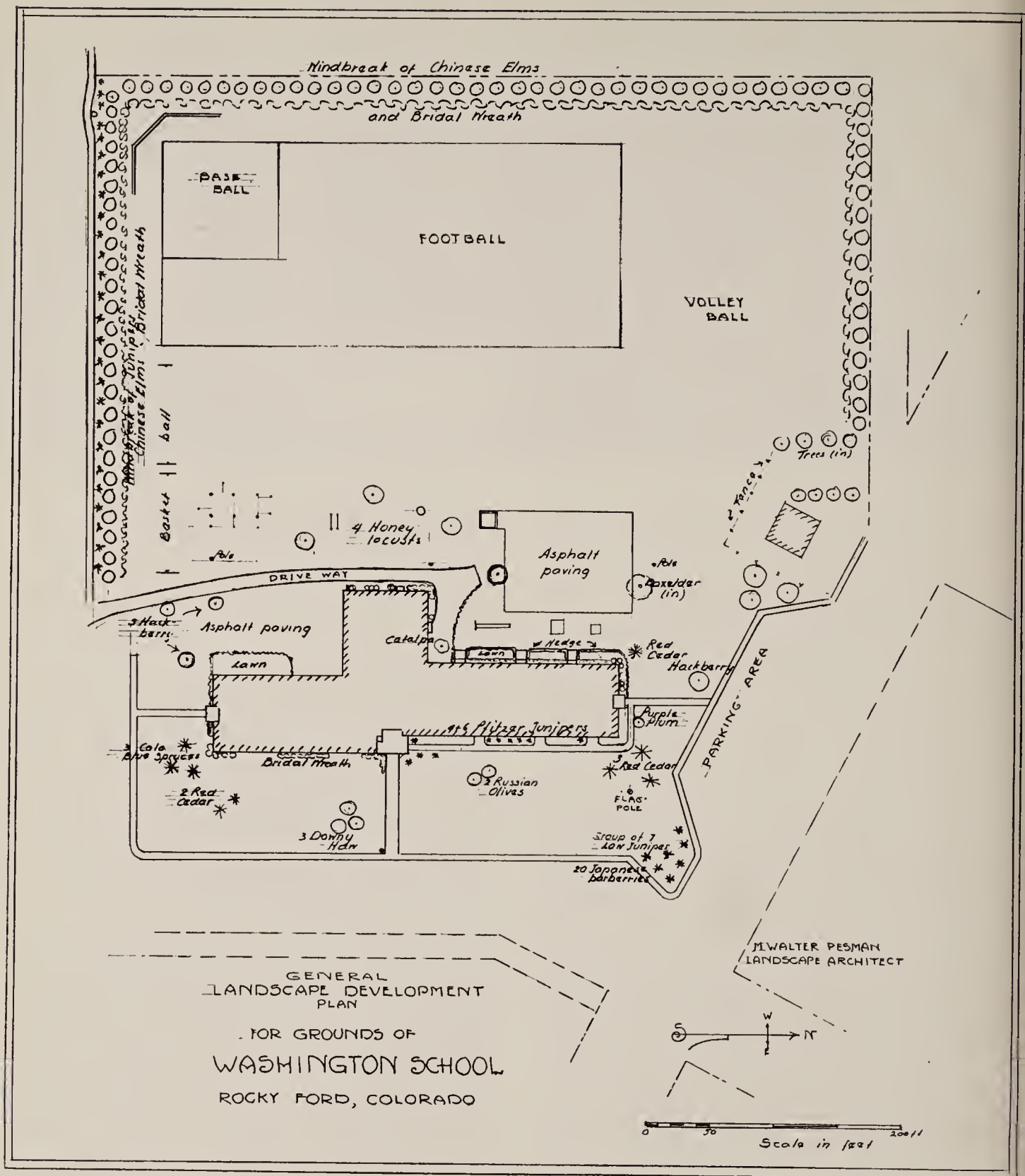
(Continued from Page 8)

It blossoms later than the other two varieties and is very profuse.

Our plants are four years old and grow to the top of a ten foot trellis. They have not winter killed and seem very hardy. They were planted in ordinary soil with a mixture of sand, cow manure and lime. They are given extra lime and manure each spring. The lime is needed if the soil is acid. (Ed.: Which is not often in Colorado.) I prune the vines of the dead wood in the early spring before the new growth starts and cut them off about five feet above the ground. I do no other cultivating of them.

Left picture on opposite page shows one of the Ash trees growing up through the kitchen in the Steele's "Flop House". Right picture is of some of the zinnias which they raise by the acre for seed. Below shows two scenes in the attractive glassed-in living porch on their home.





ROCKY FORD LANDSCAPES ITS SCHOOLS

By MRS. GEORGE T. BABCOCK

THE Rocky Ford Garden Club was asked by the School Board to take over the landscaping of the two new Elementary school buildings and a committee of four was appointed to do so.

First we contacted Mr. George Kelly of the Green Thumb who ad-

vised us to get in touch with Mr. M. Walter Pesman. This was done and Mr. Pesman made a trip to Rocky Ford.

After spending a day here Mr. Pesman drew plans for the two buildings and sent them on approval.

These were accepted by the School

Board and we started in by writing cards to all the clubs in the city asking for donations.

At first we thought we would be able to finish only a small part of the planting this first year and so started in on the trees as shade was badly needed for the children. However due to the generosity of clubs,

school patrons, teachers and scholars we were able to finish nearly the whole place.

Of course there is much work yet to be done, keeping the things watered sufficiently, also spraying cedars, etc. for red spider; but for the most part the plantings, especially trees, are doing remarkably well.

ZINNIAS

EVERYONE who has ever driven through the Arkansas valley in August and September has probably been impressed with the numerous fields of zinnias in bloom. They are raised here as a commercial crop and harvested in much the same way as grain. It is an impressive sight to see the many acres of solid, brilliant bloom. The booster committee of the Rocky Ford Chamber of Commerce thought they should take advantage of the tremendous interest which the zinnia fields created among the tourists, so they worked out a plan to give away zinnia seed to anyone who requested it. First they encouraged all the filling stations and other business places located on the highway to plant zinnias. Secondly they have registration books in sixteen of the

business places located on the highway, and anyone who registers will be sent a free package of zinnia seed next spring with the compliments of the Rocky Ford Chamber of Commerce and the Burrell Seed Co.

This is the first year that the plan has been tried so there are no complete figures on it as yet, but a quick check revealed that the number of registrations will run into the thousands, and that every state in the union will be represented.

What better way could there be to spread good will and beauty at the same time? A year from now thousands of gardeners from the Atlantic to the Pacific will be admiring their zinnias and remembering with pleasure the Arkansas valley and Rocky Ford.

Bernita Burrell Driscoll in a five acre seed field of Zinnia, Dahlia Flowered Exquisite, grown by D. V. Burrell Seed Growers, Rocky Ford.



GROWING TUBEROUS BEGONIAS IN ROCKY FORD, COLORADO

By CHARLOTTE B. FENTON

MY interest in tuberous begonias began many years ago while admiring the lovely beds of them at Elitch Gardens in Denver. Finally I began to wonder if they might grow down here so in August, 1939, I wrote to the head gardener at Elitch Gardens, Michael J. Ulaski, telling him how much we had admired the flower beds there and asking for information. He replied with a very nice letter, giving detailed information as to soil preparation, watering, and starting them from seed.

About that time I found that Vetterle & Reinelt, Capitola, California, specialized in growing begonias and I sent for their catalog. I decided it would be simpler to try tubers than to begin with seed and my first attempt was made with six tubers.

I got them nicely started indoors and planted them out under a cherry tree at the north side of the house. They quickly began to look spindly, so I moved them, trying the same six little plants in about four places that one year! I finally got a very few small blooms.

Undaunted I tried again—for four successive years—never having much success, but determined to keep on trying. The war then interrupted my gardening for several years, but upon returning home in 1946, I was given twelve large tubers which I tried in still another location. This time I obtained larger, healthy plants, but scarcely a bloom, which I had read indicated too heavy shade. Shade was the thing I had always been attempting to provide for them.

The following year I tried again—this time selecting a spot where they had direct morning sun until about

eleven, then shade for about an hour, about an hour more of sun, then shade the rest of the day and success was mine at last! The apparent reason being that I had never had them in a spot where they received any direct sun before. They are also protected from the winds by a high privet hedge at the south.

I start the tubers the last of March or first of April in flats of peat in the basement, keeping them moist but not too wet. I do not transplant them but move them directly from the peat to my outdoor bed the second week in May.

This bed is a mixture of $\frac{1}{3}$ sand, $\frac{1}{3}$ leaf mold and $\frac{1}{3}$ soil. I have the bed raised about 3 or 4 inches above the level of the surrounding ground to provide better drainage. In the bottom of each hole I place a small trowel full of fish meal, when I can obtain it, being careful that none of it comes in direct contact with the stem of the plants. Last year I could not get any fish meal and used cotton seed meal instead. However, I did not think it was as efficient, so this year I am using Blue Whale Fertilizer, which is made from whale prepared in some manner and incorporated with peat moss. This seems to be most satisfactory. About a month after planting, when they are beginning to bloom well I give each plant another small trowel full of this fertilizer, and later, if the bloom begins to slacken, I shall feed them again.

At the time I set the plants outside, I put in bamboo stakes about 12 inches long to act as supports for the plants. Putting them in at this stage avoids damaging the roots.

My begonia bed is watered along with the rest of the garden. In addition to this I have a perforated plastic hose laid along the back of the bed and I sprinkle them with this for 15 to 30 minutes about mid-day each day. Before the advent of this type of hose I had a nozzle that gave a fine spray that I used.

After the first frost I dig the tubers and allow them to dry thoroughly, being sure that no piece of stem is left on the tuber. I then pack them in peat moss and store them in the basement where the temperature doesn't get much above 50°. In the spring they are ready to start in peat again.

They are a most satisfactory flower to me—a constant source of bloom from the time they start blooming until frost stops them. They seem to be practically insect free and they are lovely as cut flowers.

For a background I have *Dicentra*, *Clematis davidiana* and blue *Campanula persicifolia*, and use the smaller *Begonia multiflora* interspersed with pansies or lobelia for a border.

What to Do With Roses After a Hail Storm

By MRS. H. C. MARSHALL

My roses, all seven hundred plants, were just bursting forth in all their glory, reminding one of the Royal Coronation of Queen Elizabeth, when on Thursday evening, June 4th, a terrific hail storm descended on them leaving nothing but the stems standing and an occasional bud here and there.

I searched through every garden book and magazine I could find trying to find out what to do when a hail storm strikes the roses, but I couldn't find a thing.

I decided to cut them all back to about ten to twelve inches from the

ground. Then I gave them a good feeding of Triogen rose food and watered them about every six days, also sprayed. It was surprising how fast they leafed out, and in spite of an almost continual temperature of 100 degrees, within six weeks they were blooming nicely. In one of the beds I have a grouping of Peace roses and on three plants I counted forty-nine blooms and eleven buds.

I left a few plants and didn't cut them back just to see what was best to do. The plants I cut back did much better and bloomed before the others had a good start. Out of the 700 plants I only lost about 30 plants. They didn't have strength enough to put out again—a very small per cent.

HOLLYHOCKS

By H. C. MARSHALL

I have liked hollyhocks ever since I can remember, perhaps it was because my mother grew so many of them.

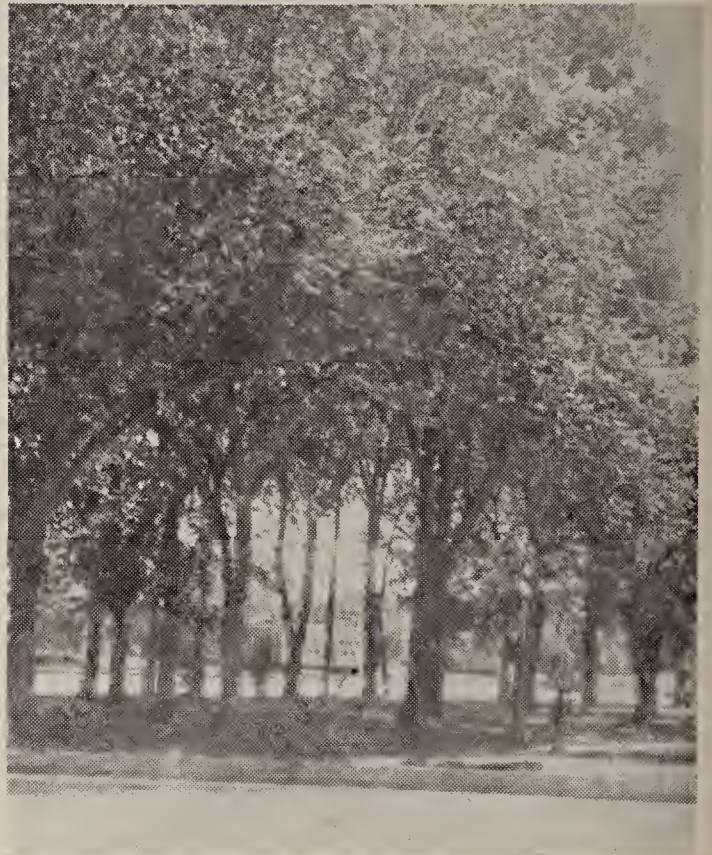
There doesn't seem to be any place in our garden for them among my wife's roses, lilies, phlox, petunias and such. Therefore, I decided to find a place where I could grow all the hollyhocks I wanted to without their being molested. Three years ago I purchased four dozen double hollyhock roots and set them out along the fence running east from the front gate. When they were through blooming that summer I cut them back about two feet from the ground and laid the stalks along the fence farther on. By carrying this plan out each year I now have almost one-half mile of hollyhocks. They are all colors, single and double, and are a mighty pretty sight for several weeks.

They take no care whatever and if cut off when through blooming many of them come on and bloom again the second time.

ROADSIDE PLANTING AT SWINK

ON the north side of the highway at Swink is a beautiful roadside planting that catches the eye of nearly everyone who passes it. Three years ago Mr. G. E. Kimball planted it, and it has been carefully tended since by Mr. Wm. R. Anderson, the town marshall. The outstanding feature of the planting is the beautiful double hollyhocks in mixed colors. In front of the hollyhocks are iris, batchelor's buttons, zinnias, and asters, each of which take their turn in adding color and beauty. This is a good example of a simple, hardy, and effective planting in what would otherwise be an ugly ditch along the highway.

Across the highway from this little strip of flowers is the little shady park that the town has developed from an odd, triangle of ground, and across from these spots is Mr. Kimball's own garden which is always a spot of beauty.



It gives the passers-by a pleasant feeling to see a community so interested in developing these pleasant places.





Unique Garden Chuckwagon in the Garden of Mr. and Mrs. Jenkins, La Junta.

ORCHIDS

IT is quite an achievement to be able to grow orchids in the land of sunshine and alkali water, but it is being done by Mrs. J. D. Craighead of La Junta. Her secret is rain water—just plain, sweet rain water. She catches it off the eaves of her house in large jars and barrels. When asked if she had ever run out of rain water, she replied, "Not quite, but I have been low several times."

Mrs. Craighead has twelve orchids, several of which have bloomed. She sets them on rocks in pans and bowls of water to keep the air moist around them. In the winter they usually occupy a large south bay window, but in the summer she finds that they do best in an east window. When watering, she sprays the entire plant.

The good idea Mrs. Craighead has of catching rain water is one that can be used by all of us who live

where the water is hard. Any house plant would be grateful for an occasional soaking in rain water.





Attractive entrance to Marshall home.

THERE CAN BE BEAUTIFUL GARDENS

Even in a Difficult Climate.

THE accompanying pictures are from the garden of Mr. and Mrs. Claud Marshall and are best explained by a few paragraphs quoted from a story in the Arkansas Valley Journal of June 21, 1949, by "The Arkansas Valley Traveler."

"I never drive through a lovely park and see the caretaker's house hidden behind clumps of shrubbery and flowers without indulging in a fleeting wish that I lived there myself. Maybe you have felt that way, too. It's because we love flowers and grass and trees. We love to dig in the soil and see things grow. We love to walk under the trees in the early mornings when the birds are all singing, the grass wet with dew, and the perfume of roses and honeysuckle and petunias makes us wish we were poets so that we could set our feelings down in words.

"If Cora Marshall has ever had that kind of longing she has had it satisfied. She has her garden. She lives in the midst of it and can indulge her horticultural urge whenever she so desires.

"The home of Claud and Cora Marshall is located on Highway No. 10 a few miles west of La Junta, Colorado, and south of Swink. You will recognize it by the quarter-mile of white picket fence that surrounds the house and garden. And don't drive by too fast, for if you will look beyond that fence you will see one of the finest and most extensive examples of landscaping in Southern Colorado.

"Cora Marshall was a school teacher when she married Claud. Even after marriage she was principal at the Newdale school for many years. The time came when she thought it best to retire; and like so many professional women she found that to retire successfully, her inherent energy must have an outlet — housekeeping alone was not enough. Her love of nature led her to take up gardening as a hobby, and that hobby has grown into a two-acre jewel of exquisite beauty. She does a great deal of the work herself, but employs a man to spade and transplant and prune, and mow the immense carpet of bluegrass.



Cattle which furnish the income and the manure necessary to make a good garden.

"Imagine if you can six hundred and ten rose bushes—tea roses, mostly, with climbers on the fences. Between three and four thousand tulips of the choicest imported strains. Hundreds of iris of rare varieties. Peonies and pinks and petunias—daisies and asters and pansies by the thousands. Bushels of gladiola and dahlia bulbs are set out every spring.

"The garden is tastefully planned. Beginning at the sundial in the center it spreads in all directions. First the formal beds edged with dwarf English privet, then the less formal arrangements, then the shrubbery clumps and finally the background hedge of Japanese honeysuckle.

"Trees of many varieties complete the garden, elm and linden and silver maple—not too many for the flowers, yet enough to give ample shade where wanted. Our attention is called to several handsome cottonless cottonwoods which Mrs. Marshall says are her favorites, and to several giant black walnut trees that must be very, very old.

"We are shown the rock garden in one corner with its little high-arched white bridge — rocks gathered from every state in the union by the Marshalls themselves, and many sent in from foreign countries by servicemen, friends of the Marshalls—from Chile and Brazil, England and France, Mexico and Canada.

"As we stood there talking a stately peacock came walking toward us across the lawn, and I thought, 'this is all it needed to make this place perfect—this handsome bird, most beautiful of all feathered creatures!'"

*Lilies, formal gardens
and the peacock,
are all details
helping to make
a good garden.*





Views of the many interesting spots in the garden. Mrs. Ormsbee admires her roses. Left, top to bottom, Mr. Marshall, Mrs. Ormsbee rings the bell. Right, the pool, shady seat and





Marshall's Garden. Above, Mrs. Marshall and Mrs. Ormsbee, the well, with Mrs. Ormsbee and a corner bell. Below, general view of the back garden.



PLANTS FOR THE ARKANSAS VALLEY.

Generally applicable to other plains or alkaline areas except for plants marked * which require a warmer climate.

First section of each list are those plants which are most useful or best adapted to the difficult conditions. Second list of plants which sometimes grow in favored situations.

EVERGREENS

Rocky Mountain Juniper
Oneseed Juniper
Colorado Spruce
Austrian Pine
Ponderosa Pine
Pinyon Pine

* *

Pfitzer Juniper
Savin Juniper
Tamarix Savin Juniper
Vonehron Savin Juniper
Eastern Redcedar
Mountain Common
Juniper

Black Hills Spruce
Scotch Pine
Mugho Pine
Douglas Fir

*Chinese Arborvitae
Bristlecone Pine
Limber Pine

TREES

Western Broadleaf
Cottonwood
Siberian (Chinese) Elm
American Elm

Honeylocust
Green Ash
Russianolive
Common Hackberry

*Russian Mulberry
English Elm
Treeofheaven Ailanthus
Silver Poplar

*Sycamore
Black Walnut
American Linden
Bechtel Crabapple

* *

Cork Elm
Golden Weeping Willow
Bur Oak

*Western Catalpa
European Mountainash
Boxelder
Carolina Poplar
Soft Maple
Cutleaf Weeping Birch
Native Aspen
Kentucky Coffeetree
Norway Maple
Sugar Maple
Horsechestnut

Cutleaf Weeping Maple
*White Ash
Moline Elm
European White Birch
Black Cherry
Pin Oak
Red Oak
Dolgo Crabapple
Hopa Crabapple
Redsilver Crabapple
Downy Hawthorn
Schwedler Maple

FRUIT

Siberian Apricot
*Peach
Early Apples
Sour Cherries

* *

Late Apples
Plums
Grapes

VINES

Native White Clematis
Engleman Ivy
Silverlace Vine
Hall's Honeysuckle Vine

* *

Goldflame Honeysuckle
Boston Ivy (for shade
only)
Wisteria
Trumpet Vine
Winter-creeper
Euonymus
Various Clematis

SHRUBS

Common Lilac
Persian Lilac
European Privet
Amur Privet
Regel Privet
Vanhoutte Spirea
Korean Spirea
Snowberry
Coralberry
Golden Currant
Sumac
Shrub Roses
Siberian Peashrub
Tamarix
Bush Honeysuckle
Forsythia
Japanese Barberry

Mockorange
Cotoneaster
Snowball
Cranberry Bush
Euonymus
Butterfly Bush
*Shrub Althea
Wild Plum
Chokecherry
Hibiscus
Aromatic Sumac
Indigo-bush Amorpha
Dwarf Peashrub
Bush Cinquefoil
Floribunda Roses

* *

Late Lilac
Flowering Almond
Redleaf Barberry
Austrian Copper Rose
Prairie Rose
Winged Euonymus
Desmodium
Jetbead
Redleaf Plum
Vitex
Lodense Privet
Garland Spirea
Froebel Spirea
Bluestem Willow
Chenault Snowberry
Pyracantha
Common Buckthorn
Glossy Buckthorn
Flowering Quince
Pussy Willow

*Redbud
Native Hawthorn
Wayfaring Tree
Elderberry

*Mentor Barberry
Beautybush
Japanese Treelilac
Aralia spinosa

*Hydrangea
Amur Maple
Mountain Alder
Mountain Birch
Nannyberry
Arrowwood
Buffaloberry
Lemoine Mockorange
Gray Dogwood
Manchu Cherry
Flowering Plum

Bush Rockspirea
Lilac Honeysuckle
Common Ninebark
Bladder Senna
Sandcherry

*Smoketree

**PERENNIALS AND
BULBS**

Perennial Phlox
Tiger Lilies
Monarda (Horsemint)
Golden-glow
Lycoris (Hardy Amaryllis)
Peonies
Alyssum
Lythrum
Coreopsis
Lathyrus (Sweet Pea)
Violets
Oriental Poppies
Sedums
Euphorbias
Painted Daisies
Achillea
Heleniums
Liatris

Blue Flax
Nepeta
Veronicas
Gaillardia
Pinks
* *
Columbine
Trailing Phlox
Madonna and Regal
Lilies
Gypsophila
Valeriana
Maltese Cross
Primrose
Delphinium
Bleeding Heart
Statice
Nicotiana
Tritoma

ANNUALS

Dahlias
Gladiolus
Petunias
Zinnias
Marigolds
Calendulas
Cannas

Sunflowers
Larkspur
Cosmos
Snapdragon
Castor Beans
Celosia
Morning Glories
Sweet Rocket
Buttercups
Four o'Clock
Kochia
Bachelor Buttons
Salvia
Portulacas
* *
Pansies
Tithonia
Nasturtiums
Sweet Peas
Lobelia
Ageratum
Annual Phlox
African Daisies
California Poppies
Candytuft
Nicotiana
Salpiglossis

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“BUCK” BURSHEARS AND THE KOSHARE INDIANS

To think of La Junta without thinking of the Koshare Indians is hardly possible. This super troop of Boy Scouts that “Buck” has developed is a very important part of the community. Their Indian dances are known all over the United States, and their Kiva and the collection of Indian art housed there are a “must” for any visitor to see. “Buck” has made a lasting contribution to the develop-

ment of work with boys that is being felt far and wide.

The picture above left, shows one of the colorful dances in progress at the Kiva. Left, below, shows one of the boys working on one of the series of scale models of ancient Indian life. Above is “Buck” and his wife with one of their small friends who hopes sometime to be a Koshare, all dressed in their Indian costumes.



Four views of the attractive new, Spanish type home of Mr. and Mrs. "Buck" Burshears.

LA JUNTA GARDEN CLUB

The La Junta Garden Club was organized in October, 1952, with Mrs. Wm. R. Rees elected as the first president. They have twenty-five members. In July, 1953, they federated with the State Federation of Garden Clubs.

Mrs. H. C. Marshall has served as program chairman. Mr. George Kelly was guest speaker at our first meeting, and Mrs. Kelly gave a demonstration

of Christmas decorations at the December meeting. Among the other outstanding programs have been "Trees for La Junta," "Hardy Spring Bulbs," and a film on the care and culture of roses.

The plans of the club include assisting with landscaping of the Junior College gymnasium, participating in the flower shows at the state and county fairs, and arranging tours of La Junta gardens.



TULIPS

By MRS. H. C. MARSHALL

ONE of the most colorful seasons in my garden is tulip time. I wanted a lot of tulips but didn't want to leave them in the beds until the tops died down for two reasons; the tops are unsightly and they are in the way for other plantings.

I started out with two hundred bulbs and just as soon as they were through blooming I broke off the seed pods and lifted the bulbs out of the ground carefully in order to not break off the stem, then I stood them in trenches about one foot deep I had dug out in the vegetable garden. I covered them, gave them a good watering and left them there to ripen, which takes until about the first of August. I then dug the bulbs and stored them until planting time.

I found I had nice plump bulbs, also a lot of small bublets which I planted in rows in my trial garden. The next fall, they were blooming size bulbs.

I have carried this process through for several years, adding a few new bulbs each year until I now have six thousand big blooming bulbs. I take them up each spring after blooming and plant again in the fall. Those I plan to take up I only plant about three to four inches deep. This depth makes it easy to lift them out without breaking the tops off. They take more water at blooming time when planted shallow but by watering often I can keep them in bloom for five to six weeks.

I like tulips for my big beds that bloom at the same time, this makes a more beautiful display. I have many varieties and colors of tulips but my favorite beds are, two round ones planted with red City of Haarlem, white Zwanenburg and Bleu Aim-

able; a triangle shaped bed of eight hundred red Pride of Haarlem and four hundred Yellow Giant; and a half circle bed of pink Princess Elizabeth. Other favorite tulips are Golden Harvest, William Copeland, Bronze Queen, Gloria Swanson, Red Flag, Crimson Giant, Picotee, Mrs. J. T. Scheepers, Inga Hume, the multi flowered and the parrots.

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*Tulip Border at Burpee's Fordhook Farms
Photo loaned by W. Atlee Burpee Co.*





PLANT FALL BULBS TO WELCOME THE RETURN OF SPRING

By JEANNETTE LOWE,
Horticulturist, W. Atlee Burpee Co.

ANNUAL and perennial flowers keep your garden gay all summer long, as well as provide attractive bouquets for the home, office, and

church. Fall asters and chrysanthemums bring the floral display during brisk autumn days, but how will your yard look after the winter, when

warm sunshine awakens dormant plant life? Now is the time to plan a colorful display of crocuses, daffodils, tulips, and hyacinths to herald the return of Spring.

Time to Order

Fall bulb catalogs have been arriving daily with their tempting illustrations and descriptions of old favorites, as well as new specialties developed by world famous plant breeders. Healthy, plump bulbs, raised under ideal conditions either in Holland or the Pacific Northwest, reach the market by mid-September. The wise gardener, however, places his order early, to be sure of receiving the cream of the crop. He also buys from a reputable firm which carries reliable stock.

Succession of Bloom

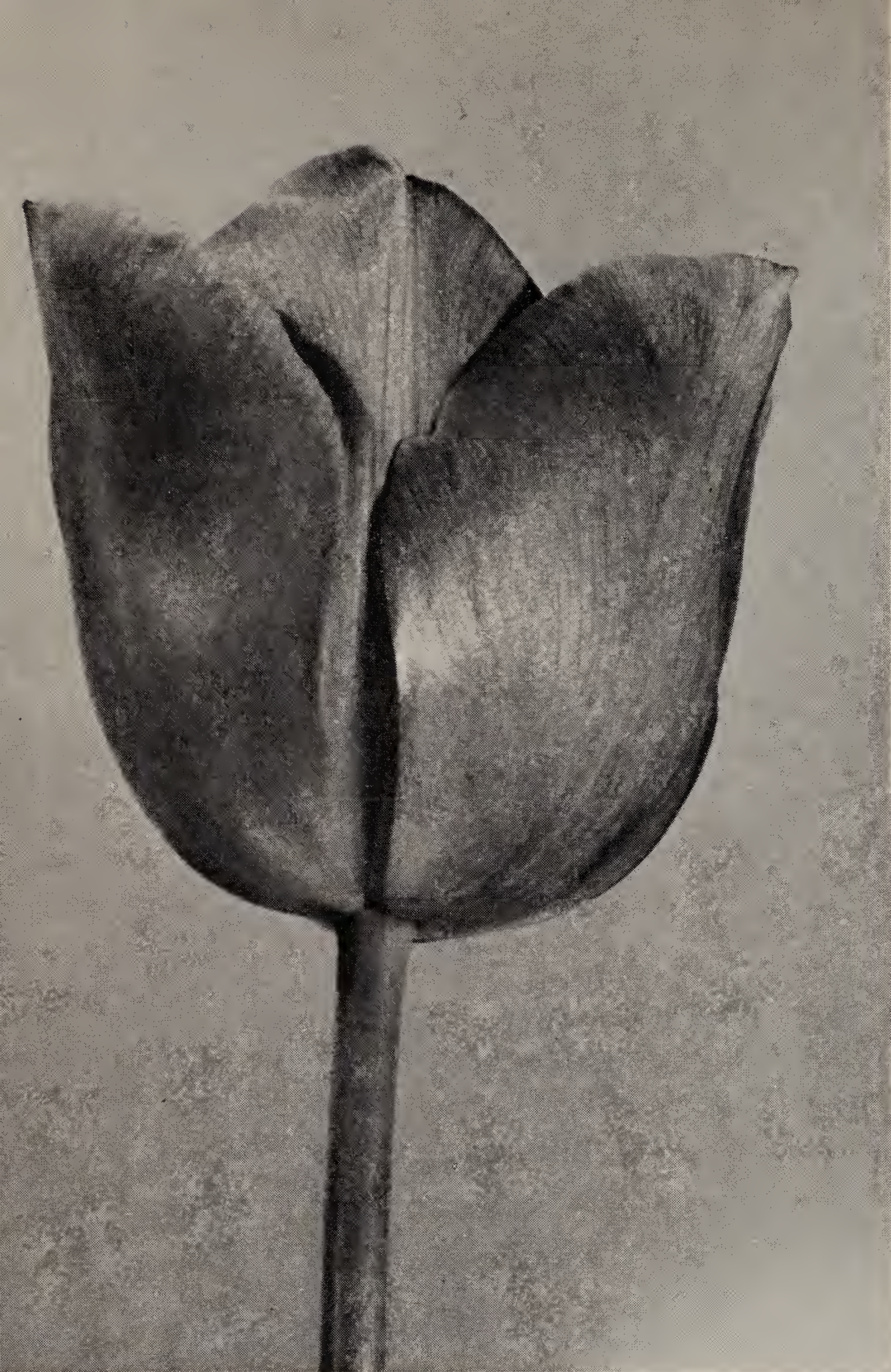
An investment of even a few dol-

lars' worth of bulbs now gives big returns of cheerful blossoms next spring. Crocuses, Daffodils, Hyacinths, and Tulips immediately come to mind as chief performers in the spring garden, but the period of bloom can be greatly extended by including some of the so called "minor" varieties which brave wintry weather with their gallant blooms. The parade starts with Winter Aconite (*Eranthis*) and Snowdrops (*Galanthus*) whose flowers defy late winter snows. Soon following are the multicolored Snow Crocus and Spring Flowering Crocus; blue Glory of the Snow (*Chionodoxa*) and Siberian Squill (*Scilla sibirica*).

By now Spring has really arrived with a burst of golden glory in giant trumpet daffodils and forsythia. What could be a more welcome sight after winter's gray days? The possession

Below, Chionodoxa, Glory of the Snow. Opposite page Crocus. Photos loaned by the W. Atlee Burpee Co.





Tulip

continues with two-toned daffodils, fragrant hyacinths, and a long season of bright tulips, from the early species varieties to the regal late flowering Darwins.

Easy to Grow

Spring flowering bulbs are so easy to grow that they are almost foolproof for even the new gardener. Each

bulb planted in the fall already contains a perfect blossom in miniature, and a generous nutrient supply. After a winter dormant period, spring rains and warm sunshine bring this embryonic flower to fulfillment.

You will, of course want to give good growing conditions for the best display of flowers, and for the continued year-after-year performance of

Narcissus



the bulbs. Any reasonably fertile, well drained soil is satisfactory. Early fall is the best time to set out daffodil bulbs, whereas other varieties can be planted anytime before the ground freezes hard.

Culture

Thoroughly spade the ground to a depth of about a foot and work in

generous amounts of well rotted manure, compost, or peat moss, especially in very heavy or sandy soil. Some also like to add a small amount of a complete fertilizer and some bonemeal. Set "minor" bulbs, crocuses, and grape hyacinths 2-3 inches deep and 3-4 inches apart (the depth refers to the distance from the soil surface to the neck of the bulb).

Species tulips are best 4-5 inches deep and the same distance apart; whereas other varieties go 5-6 inches deep and 6-8 inches apart. Daffodils and hyacinths are set 6 inches deep and 6-8 inches apart. The actual depths depend somewhat on soil conditions. In light soil plant deeper than in heavy clay. (Ed. note: In the Rocky Mountain area add 50% to depths given.)

In localities with severe winters, after the ground has frozen hard, mulch the bulb plantings with a loose covering of hay, straw, or evergreen boughs. This prevents alternate freezing and thawing of the soil, and disastrous heaving of the bulbs. Remove this covering early in the spring. When the bulbs are peeping through the ground, you may now apply a little dressing of a complete fer-

Hyacinth

tilizer which will help to increase bloom size.

Let Foliage Ripen

Soon your garden will be bright with flowers. Enjoy them to the full, either in their outdoor setting or for indoor arrangements. Remember, however, not to cut many leaves for greens in bouquets. Also after blooming is over, be sure to let the foliage continue growing until it turns yellow and withers of its own accord (4-6 weeks). Good foliage growth, stimulated by feeding with a complete fertilizer and bone meal, is essential for the development of bulbs for next spring's performance. If you wish, you can tie bunches of leaves together loosely, so annual plants or seeds can be started in between the bulbs to give bloom later on.

Planning Pictures with Bulbs

In choosing and planting bulbs this fall, give your artistic ability full freedom—there are infinite pictures to create with spring flowering varieties. Remember these few helpful pointers. Choose colors which are harmonious and blend with your house and flowering shrubs and trees. Except in very formal yards, bulbs give a more gracious effect when planted in naturalistic groups, with at least six, better yet twelve or twenty five of a variety in a clump or drift. Avoid stiff, straight line arrangements. Set bulbs in the central part of perennial borders, so edging plants hide ripening bulb foliage.

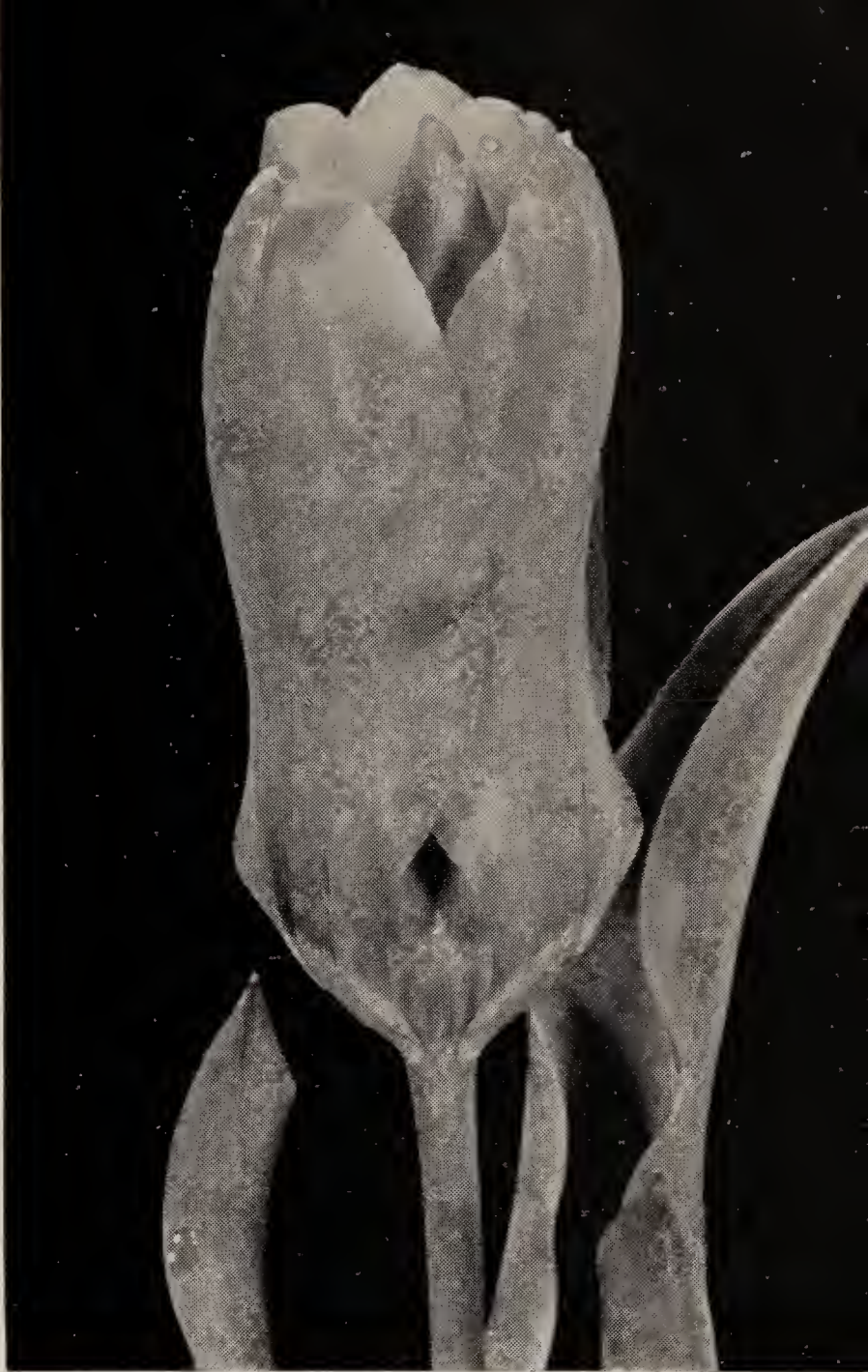
And now—a few beautiful color combinations. Try daffodils with an edging of blue and white pansies, forget-me-nots, or inter-planted with blue *Mertensia*, *Pulmonaria*, or fragrant blue *Hyacinths*. Naturalize drifts of daffodils along a woodsy path, among ferns, or in a meadow by a brook or pond. Forsythia, flowering quince, crabapple, peach and plum



trees, and magnolias bloom at the same time and add to the picture.

Early species tulips, especially Clusiana, Kaufmanniana, Praestans, and Red Emperor are showy in the rock garden. Red Emperor, with its huge scarlet flowers, also is a gay accent for daffodils and grape hyacinths. The species tulips are quickly followed by the early varieties, both single and double, the Cottage types, and the tall stately Darwins—all in a rainbow assortment. The light shades—white, yellow, pink, and silvery lavender—are effective in front of evergreens; dark colors—purple, maroon and red—make a fine contrast with white flowering shrubs such as Spiraea Vanhouttei, or white pansies and candytuft. Tulips also bloom at the same time as flowering dogwood, cherries, apples, azaleas, and lilacs, and combine beautifully with them. Use bulbs of different colors generously for a memorable spring display.

Tulip, Red Emperor. All photos by W. Atlee Burpee Co.



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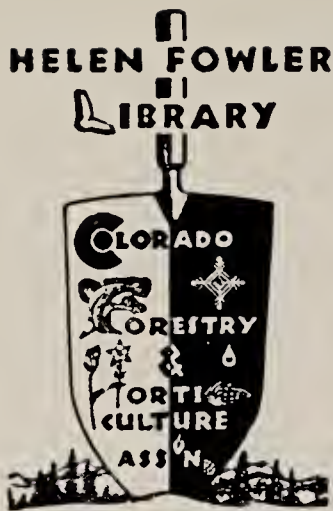
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GOOD NEWS

For All Plant Lovers.

For many years lovers and students of the native plants have felt the need for up-to-date revisions of the present books dealing with native plants. Rydberg, Coulter & Nelson and Clements & Clements have all served their purpose but are now out of date. Pesman's "Meet The Natives" has filled a very important gap, even though not recognized by the strict botanists.

Now we have two new books just out and another soon to appear. Ruth Ashton Nelson has completed a revision of her old book on the "Plants of the Rocky Mountain National Park." It has completely revised nomenclature, new pictures and many additional plants. It is written in a very readable way and still is scientifically accurate. While it is only

intended to cover a limited area it still includes a great majority of the flowers, trees and other plants found commonly in the mountains.

It is published by the National Park Service and is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at \$1.00. You will enjoy it.

William Weber, botanist with the University of Colorado at Boulder, has just completed his new book, "Handbook of Plants of the Colorado Front Range," published by the University of Colorado Press and available at book stores for \$5.00.

This book is of some greater range of use than Mrs. Nelson's book, covering the area from Rocky Mountain Park to Pikes Peak and from the plains to the 14,000-ft. peaks. It has 238 pages and covers 1400 species of plants. It has many little helps for the botanists such as keys, and helps over the rough spots of keys, glossary, index, explanation of scientific names and wonderful drawings to illustrate plants difficult to describe.

All who know "Bill" Weber will appreciate this new addition to the botanical literature of the area. It has a down-to-earthness and still a scientific accuracy to please and benefit everyone.

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WILDFLOWERS ON THE PLAINS.

By MRS. MARY ORMSBEE

THE words "Colorado Wildflowers" bring to the minds of most of us a picture of a beautiful mountain valley with columbines, fairy-trumpets, shooting stars, and wood-lilies against a background of evergreens. Actually, however, the eastern plains have many lovely wildflowers, and even here where it is semi-arid, except for the irrigated areas, we have many wildflowers. This past spring, during which we were fortunate enough to have several good rains, was an exceptionally good time to see them. It is really a breathtaking sight to see the masses of color when the prairies are all in bloom.

Although they are not the first flowers to bloom, the primroses give about the first mass effect. Their white, pink, and yellow blooms suddenly appear by the thousands. A short time later the locos bloom in beautiful shades of red, blue, yellow, and feathery white. Toward the end of May the cactus brings a show that is unequalled. Their yellow, white,

purple, and blood-red blossoms, combined with the stately spires of creamy yucca make the prairies look like vivid gardens. Scattered around in the slightly damper places are the orange cowboy's delight, the sky-blue penstemons and wild morning-glories, spikes of dock shaded from green to chocolate brown, and pink clouds of tamarisk.

Later on, yellow seems to become more predominant as the sunflowers, dainty sundrops, golden paper flowers, golden glow, snakeweed and rabbit brush take over.

Not so easy to see from the roads, but usually present, are Evening Star Flowers, Showy Verbena, Showy Four-O-Clock, Salsify, Blazing Stars, wild Larkspur and Coneflowers.

This is a very incomplete list by an amateur wildflower observer, and is intended only to bring attention to the fact that the prairies as well as the mountains have been blessed with generous arrays of wildflowers if we will but open our eyes and look.



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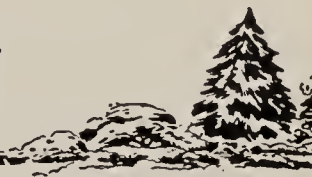
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FROM HELEN FOWLER'S GARDEN NOTE BOOK

*We pass this way but once. Let us beautify the path as we go,
so that the world may see which way we went.—C. S. HARRISON.*

OLD, well-rotted manure makes a good mulch for the hardy border, as the greatest part of it can be worked into the soil about the plants in the spring.

During this hot weather lawns are greatly improved by the use of a mulch of pulverized peat moss. After mowing, scatter a one-inch layer on top of the grass, turn the wooden rake upside down and use it back and forth to work the material into the grass.

Have you a long walk somewhere in your garden? You will have something heavenly if you plant regal lilies the entire length, all the way, dozens of them, with a carpet of the glossy leaves of vinca minor. The scent of these lilies has an exhilarating, almost intoxicating effect, reminding one of jasmine. The beautiful clusters of white on top of their long stems look well, too, in a corner in front of a *Rosa rubrifolia*, with its dark-red leaves, which tend to bring out the rosiness on the backs of the lilies.

Do You Really Know How To Plant Tulips?

Most gardeners consider the proper depth to be three times their width. And do you plant the pointed side up or down? It should be UP with the root side down. It is best not to use a pointed tool for making the holes for it often leaves air pockets under the bulbs. Press down the bulb firmly against the sand, a handful should be thrown into the hole before planting. The sand is necessary only if the soil is clay.

I was reading, somewhere, one day from Alexander Smith. "It is curi-

ous—almost pathetic," he said, "how deeply seated in the human heart is the liking for gardens and gardening. The sickly seamstress in the narrow city lane tends her box of sicklier mignonnette. For the disabled statesman every restless throb of regret or ambition is stilled when he looks upon his blossomed apple trees." Is the fancy too far brought that his love for gardens is a reminiscence haunting the race, of that remote time in the world's dawn when but two persons existed—a gardener named Adam, and a gardener's wife called Eve?

On the Rose garden—It must not be in an exposed situation. It must have shelter but it must not have shade. Do not allow boughs to darken, nor drip to saturate, nor roots to rob the rose.

I have pleaded that the Rose Garden must be a garden of Roses only. We do not plant shrubs around our oaks, and "no bird may warble when the nightingale sings."

Dean Hole in his "A Book About Roses" differs with the great William Robinson (*The English Flower Garden*). "I am painfully aware," writes the Dean, "that I differ in this matter from an illustrious gardener and author, who is my dear friend with whom I believe myself to be in full sympathy as to all the great principles of horticulture, and who has written in his **MAGNUM OPUS** that he covers his rose-beds with pansies, violets, stonecrops, rockfoils, thymes and (here comes the unkindest cut of all) any little rock plants to spare. Carpeting these rose-beds with life and beauty was half the battle." Dean

Hole continues, "We do not wish to have our attention diverted, our homage divided, by carpets, however lovely and attractive; and though good roses may be grown with these additions, better roses may be grown without them." Further Dean Hole writes "If there might be any special dispensation for the addition of other flowers, it would be only conceded in small gardens, or where the surroundings were adverse to the cultivation of Roses, and then exclusively to the bulbs which precede, or to the annuals which follow, the royal efflorescence."

Shall We Have Dogs or Flowers?

One woman has both by the use of a weak solution of Nicotine Sulphate, spraying both the ground and the plants. The regular commercial preparation contains 40 per cent of Nicotine Sulphate so in this case 2 teaspoons to a gallon are used, as the dog has a keen sense of smell and the odor is repulsive.

Application is made after light snows or rains. While in these very hot days, when fumes evaporate rapidly, spraying should be done every two weeks.

Make Cuttings Now to Set Out Next Spring—

Very few gardeners take advantage of making cuttings to root at this time. Before danger of the first heavy frost make a supply of cuttings of your best Geraniums, Heliotrope, Verbenas or any other annual or tender perennial, to be set out next spring.

If protection is made against the first frosts, cuttings can be rooted out of doors. These heavy first frosts are almost always followed by three or four weeks of growing weather. If flats of sand are used for cuttings, they should be placed where they can be shaded—on the north side of a building, in the shade of a porch, or

of course in a frame with covering near, of bags or blankets in case they are needed. The sand should be soaked before putting in the cuttings, but from then on kept only moist.

Potting Plants in the Fall—

It will soon be time to bring our outdoor plants into the house, the tender ones sooner than the hardy ones—these latter may benefit by being left out rather late. Pots must not be filled too full for then water runs off the surface with the result the lower levels are often powdery dry though the surface is muddy.

The soil must be packed firmly around the roots, if not, air enters, the water quickly evaporates, the plants develop poorly and they may die from thirst.

If the plants are set too deeply, they do not look well and watering must be done too often as the soil dries out too rapidly.

If the above three points are overlooked, the plants are sure to be failures and they may even die.

Opening the encyclopedia at the name of the great Ludwig Helmholtz we find he was one of the world's greatest scientists; his inquiries into acoustics alone resulted in a standard university work. Among other things he gave to the expert men, skilled in treating the diseases of the eye, the important ophthalmoscope, and his work in the field of electrodynamics and thermodynamica will live forever.

But do we know, as he told, that no great thought ever came to him at his desk nor out of the routine of the day's work, but only when he was wandering in his garden, thinking of nothing in particular, that these conceptions of his extraordinary genius came to him?

To contemplate the generous Hand of Infinity in our own garden might make it far more fair.

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A CHECK LIST FOR GARDENERS IN SEPTEMBER

SEPTEMBER is the time of harvest, when the fruits of plants are gathered, the tender bulbs are dug and the summer routine of weed, water and cultivate is broken. The spring time enthusiasm which comes with the new leaves is waning now but many things should be done for the garden this fall and in anticipation of another season next year.

With the cool days waterings may be spaced a little farther apart.

Clean up the dead stems of perennials and annuals.

Transplant when necessary those perennials that are now dormant.

Trim the scraggly shrubs, trees and vines.

Start a compost pile with the refuse material obtained in cleaning up.

Try several materials, including sawdust as a labor and water saving mulch.

Edging the lawn may make a lot of difference in the neat appearance of the garden.

Raking the walks and lawns may also make a lot of difference in the garden.

Now may be the time to level up the flagstones and repair the terrace.

How about a coat of paint on the picket fence and pergola?

This is the best time of year to seed a new lawn or repair an old one.

Don't forget those few dandelions and other weeds which are now trying to produce seed to perpetuate their species next year.

Several species of aphids work very late in the season—just before the leaves fall. Watch for them on Snowball, Euonymus, Dogwood and Junipers.

Visit your neighbors gardens and get good ideas for better plants, design and maintenance in your own.

Take some of your thinned perennials to some one in a new small home that needs a start of flowers.

Resolve that this fall you will go back to school with the kids. Get books at Horticulture House to increase your Garden knowledge.

Realize that soil is the basis of any garden success and start now to improve yours. Add plenty of well rotted organic matter.

Make notes of all the failures that you have had this season so that you may avoid them next year.

Possibly you may plan for a fruit tree or shrub which will also have ornamental value for your next year's planting.

Many of the native wild flowers are now in seed and some of these may be grown in your garden.

Plan for a bigger and better garden next year.

Let's take time now to go to the mountains and enjoy this ripening season among Nature's landscaping.

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The Green Thumb

Vol. 10

OCTOBER, 1953

No. 10

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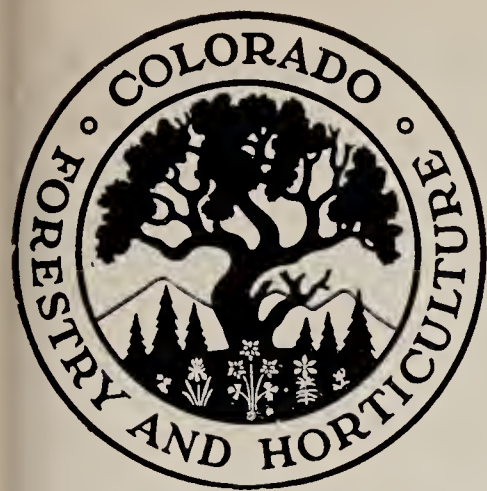
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OCTOBER SCHEDULE

- Oct. 11—Jackson Creek from Sedalia.
- Oct. 14—8:00 P.M. Meeting of the Organic Gardening Club at Horticulture House.
- Oct. 18—Dorothy Lake via Arapahoe Pass.
- Oct. 25 — Urad Mine and Ruby Creek up Urad Gulch.

Educational Programs For Fall and Spring

Rather than arrange horticultural programs at Horticulture House as in the past we plan this season to take horticulture to the people who need it most—the new home owners.

During October and November, this fall, and February and March, next spring, there will be a series of classes or lectures arranged in 6 or 8 of the new suburban communities. These community meetings will be followed by one all-day conference where everyone will be invited.

The basic fundamentals of good gardening will be given in the community meetings, including the fundamentals of planning a garden, the proper trees, shrubs and flowers to use for each situation, the care of plants, how to prepare soil and the use of fertilizers. The all-day meeting will deal with many small details of good gardens such as Lawns, Roses,

Iris, Tuberous Begonias, Flowering Trees, Organic Gardening and Insect Control.

There will probably be about 4 weekly meetings, arranged as to time and place to suit the majority in the community.

This will be largely an expansion of the fine program that Denver's County Agent, Herbert Gundell, carried out last spring. Pat Gallavan of the City Forester's office in Denver and George W. Kelly will assist with the weekly programs and many experts will be called in to help with the final, all-day program.

Anyone interested in securing this service for their community should contact one of the men mentioned as soon as possible.

Rocky Mountain Turf Grass Conference

All interested are invited to attend the sessions of the Rocky Mountain Turf Grass Conference and Equipment Show which will be held all day at the Park Hill Country Club, 35th and Colorado Blvd., Denver, October 19.

The equipment demonstrations will be in the morning from 9 to 12 and in the afternoon from 1:30 to 4 there will be talks by experts on various phases of good lawn care.

NEW ROCK GARDENS

By MRS. FRED SHORTT

WE were looking for a location to build where we would have a good view, when we found one that not only gave us a marvelous view, but which had good possibilities for landscaping and gave us the opportunity to really develop a rock garden of large proportions. There was about a four or five foot drop on the south side to the alley, and about an eight foot drop on the west side to the street, narrowing to yard level on the north.

In the summer of 1951, I had the opportunity to take a landscaping class taught by M. Walter Pesman. We visited many large and small yards where good principles of landscaping were used, and found some rock gardens which were utilizing steep banks.

Then, there were the "Look & Learn" Garden Tours which were a big help in obtaining ideas.

One of the big problems we had in the yard was ROCKS. About three-fourths of the soil was rock, so the first job was to get as many of those out as possible. What soil there was, after the rocks were cleared, was very good; but, we had to buy over 200 yards of top soil. We used about 10 yards of Caribou peatmoss in the soil. After the yard was in fairly good shape, we began to give more time and thought to the rock garden. The rocks we dug from the yard could not be used, so we began to look for large interesting rocks. We had been collecting some as we'd find them. Finally, we found an area north of

All pictures on these pages from the garden of Mr. and Mrs. Fred Shortt.



Boulder where there were beautiful rocks of all colors and markings, some pitted and some with crevasses and covered with lichens. The more rocks we gathered, the more particular we became, and the bigger the rocks were that we tried to get. We rolled the rocks up a plank into a pick-up truck. We would try to put each load of rocks in place forming the planter spaces and fill them with top soil after each load, and, of course, try to plant as much as we could. It took us a year and a half, and over seventy-five loads of rock to get it completed, just finishing in June of this year!

We are trying to get perennial rock garden plants established, leaving a few planter spaces for annuals as they do add color that is needed. We hope to have flowers blooming the entire season. To add more interest, we have planted some spreading junipers, red-leaf barberry, and several Anthony Waterer spirea bushes.

There are many plantings of sedum—of all kinds and colors, from low spreading to the more upright—creeping phlox of various colors, sempervivums (hen and chickens), chives, parsley, mint, iberis (candytuft), aubrietia, ajuga, primroses, violas, pansies, forget-me-nots, sweet william, alyssum (basket of gold), myrtle, nepeta (Dropmore), dianthus, grape hyacinths, dwarf iris, blue flax, saxifraga, coral bells, crocus, rock jasmine and many others. For annuals we grow dwarf marigolds, zinnias, nasturtiums and California poppies. We have planted a row of iris at the base of the rock garden on the south side and at the top on the west side that should present a nice picture next spring. There is a row of rocks lining the driveway among which we planted strawberries.

There is a lot of pleasure in having a rock garden—the greatest being much less WEEDING!



A SLEEPING BEAUTY OF FOOTHILLS AND PLAINS

By MILDRED STEELE

LIVING and growing up under a mountain is a priceless heritage, a most extravagant dowry for a Father (D. M. Andrews) to give a Daughter to cherish throughout her lifetime. Every season there came a change in the pattern of things, every day its own new blessings.

Come springtime, we anticipated the first anemone, going out to look for just one wooly bud, long before we knew it was time, and settling on a branch of alder catkins which would lengthen out into tassels after being placed in water a few days, or perhaps it would be pussy willows. The tiny green leaves break out of their winter sheath, and prove all over again that there will be a Spring and soon. Next, we could expect the Spring Beauties, smell the tangy fragrance of Oregon Grape, the heady sweetness of the Wild Plum, startle as a meadowlark's song filled the silence—Bluebells, Golden Peas, Sand

Lilies—almost sacred in their whiteness. Every joy an old one, but each Spring a new experience.

One would never suspect the yucca of being the true queen of loveliness it is, when it blossoms early in the Summer. Being evergreen, the color blends pleasantly with the yellow browns of the dried grasses and gray violets of mountain mahogany which clothe our Winter Landscape. The yucca is a most useful plant. From our earliest mankind we learned the roots were used for soap and the leaf fibres for basketry. During hard winters when forage is scarce, rabbits and even range animals will find hard gained nourishment from the nearly inedible leaves. Yucca plants grow in colonies and successive seasons raise the blooming crown, making quite a tuft in time. It is in the center of such a clump that a rabbit can find a safe refuge, and a perfect home for his family.





From drawings by the author.

Just who first told me about yucca dolls, I cannot remember, but it must have been my older Sister, who shared so many secrets with me. The blooming of the yucca was a major event, surely. The tall stalks of greenish white flowers were fragrant, inviting many beautiful butterflies. Silvery mountain sage thereabout made a sight to behold. As a small girl, I could just reach over the "stickery" leaves to pick a bud nearly ready to open, and there, inside was a doll to be dressed in a gown of "fabulous" material, after a bit of trimming.

First, remove the petals one at a time, then trim off one green-stockinged leg (there are three) and all but two stamens, which are the arms. To obtain the finest garments, one must travel far afield, but the best is not too fine for this elfin doll. Perhaps one would like a pink dress made

from a rose petal. Trim off the top of the petal where it fastens to the flower, then slip it under the arms of the doll, and fasten securely in the back with a rose thorn. An extra large flower of the wild campanula, trimmed at the top so it will slip on easily will be a gay scalloped dress of blue. If trimmed quite short, it is like the tunic of a Court Herald. A lupine blossom makes a good sun-bonnet, a bluebell, an exotic high-crowned hat, but a columbine spur is the most fantastic cap of all. Should our doll be destined for a journey, a large yucca petal is a "seaworthy" boat, if the water isn't too rough. Imagination runs riot.

How many fond hours one can spend on a Summer's day, toying with nature's smaller gifts! But how could they be cherished more, in one's memory treasures?

ROCK GARDENING

By MARION I. ALEXANDER

BOULDER, at an altitude of 5,600 feet, lies against the foothills and looks eastward to the plains. In a town with a mountain backdrop such as Boulder has, the chances to use natural settings for gardens are many. The mountain areas of Colorado, in general, offer marvelous opportunities for gardens among rocks. There is no problem of acquiring rocks, and the successful use of what is on the property should be a feature of our gardens.

With the mountains at hand for study, it is easy to gather suggestions for a pleasant lay of rock. A desirable garden picture is not always presented, however, when we copy what we see in the wild. Coloradans know the beauty and hazards of a talus slope, perhaps with a group of thistles in one corner—a home for coneys. We know the sunny slopes with haphazardly scattered rocks—certainly nothing to be copied. Too many gardeners forget the picture as



a whole. I have read that the contour lines of a well laid rock garden make it a pleasing structure before the plants are placed. Often the excuse for a poorly designed structure is offered: "Perhaps it will look better when it is covered with plants." Avoid including souvenir rocks from far places. Keep them at hand on your terrace or near your lawn chair for conversation pieces to help recall a high climb, a wild desert, or the seashore, but do not introduce odd rocks in a structure that should present continuity. The plan for a rock garden should include, in basic design, some very large rocks of a weathered quality. These should be placed deep in the soil, with raw edges concealed, and tilted in such a way that good pockets of earth are held safely and moisture is drained back into the root areas of the plants growing there.

Only plants appropriate to the scale of the area should be chosen. The size of the project determines the size and height of the planting. The ideal rock garden should have a fine background of evergreens that do not shade the area. However, one uses what is at hand. Our rock garden makes use of an east facing lawn slope, and it has only the house—which, fortunately, is an English cottage—as a background. It is a small garden, about six feet deep and 120 feet long. Only a limited number of plants can be grown there. Because of its position on the street we have tried to give it more than one season of interest. To me, the features of form, texture, and leaf color have been as important as seasonal bloom. In such a prominent position a rock garden must not be a burst of spring color and then lose all attractiveness. It can, of course, have the lovely April surprises and the May and June heavy blossom periods that are characteristic of all rock gardens. Plants that will bloom later form green areas to balance the spring color.



Above: Heleborus orientalis, which will send somber, wine-colored blossoms thru February snow. Center: Dwarf Mugho pine in center, Potentilla to the right and Carpathian Harebell on the left. Below: Thyme-filled steps, with Sempervivum in the rock corners.

Plants chosen for a rock garden should not be common border plants. To take the trouble and undergo the expense of construction for a handful of ordinary garden flowers that would be happier on the level seems wasteful to me. Such flowers are not rock garden plants. The terms rock plant and alpine plant seem to have a broader usage, however, than their exact definitions. Alpine plants, strictly speaking, are those that grow above timber line. In our dry area it is difficult to grow true alpines. However, we should try to grow more plants from our mountains and other mountain areas of the world. Rock plants are plants that grow only in a rocky habitat. These definitions of alpine and rock plants are not sufficient to suggest our usage of the expression rock garden plants. Some

rock garden plants are tufted and erect, some are drooping, others form close mats. Mere dwarfness will not do, either. Some one has characterized the type of plant that belongs in a rock garden as having compactness, freshness, and clean-cut brilliance.

Various problems present themselves at different seasons of the year. Just now, for example, much of the gardening is looking toward Spring. The accompanying pictures show some points of interest during the late Summer season. I have been thinking, as I plan for Spring, that a rock garden is a gardener's garden, and that you must read widely, choose wisely, and garden generously if you would gain the satisfaction possible in building and operating a rock garden of your own.





Natural boulders may be the theme of Boulder gardens, but adding to this effect over the town is the expert use of the distinctive cut flagstone, as demonstrated in the University buildings. The rough-cut effect and long horizontal lines give a unity to the campus not often seen in other college towns. Photo courtesy Boulder Chamber of Commerce.



BOULDER COUNTY ISSUE

We appreciate very much that Wayne Nuzum and his wife took the

time to line up much of the material for this issue of the Green Thumb from good gardens and good gardeners in Boulder County.

Although Boulder County does have better horticultural conditions than most other areas of the state and can grow a much greater variety of things, anyone living anywhere in the state may learn much from studying the garden features pictured and described here.

Attractive highway planting along the road east of Boulder.



SEEDING LAWNS IN SUMMER

By WAYNE NUZUM

THE secret of a beautiful home is a beautiful lawn, and the secret of a beautiful lawn, I believe, is planting in the summer. I imagine to most of you winter means the three months, December, January and February, and spring would be March, April and May. Therefore the next three months, June, July and August must be summer. July is the best month I think to plant a lawn, with June or August a close second.

We live here in cool, colorful Colorado, remember? (Yes, and remember that you live in Boulder, Wayne, where growing conditions are better than over most of the state. Ed.) All lawn grass seeds germinate best in warm weather. It is true grass seed will germinate in temperatures down to 40 degrees Fahrenheit, but the rate of development is a long story. They will also grow at daily temperatures of 90 degrees Fahrenheit but the ideal temperature is about 68 to 75 degrees. At the ideal temperature white dutch clover will germinate in 3 to 5 days and Kentucky bluegrass will germinate in 10 to 28 days, so, here in Colorado summer lawns germinate quicker and better. If a lawn is planted March 1st, it may come up and be mowed about June 1st or in a period of three months. (Remember old lawns are not mowed until approximately May 1st). A summer lawn will be mowed from four to five weeks after planting.

Weeds grow spring, summer and fall when given water, but I have not observed any more weeds in summer than spring. In fact I believe the most weeds grow in the spring, they germinate better than grass in cold weather and grow faster. A very high percentage of weeds in new lawns

are annuals and will disappear after a few mowings.

Sure, water is necessary for a summer lawn. The newly planted area must be kept moist (not wet), which usually means watering two or three times daily. This schedule of watering is only for one month, and I choose to water for one month in the summer as against three months in the period from March to June, in the spring. Perhaps one watering per day will do in the spring, but the duration of the watering period is three times as long, and I don't like to freeze sprinkling a new lawn. A fall lawn takes more water and more care to bring it thru the winter and the following spring, before being mowed in May. Failure of a very few summer lawns is not due to the seeding being burned by the hot sun, but to infrequent watering.

Thick lawns have many advantages, and since germination is so much better in summer and the grass grows faster in warm weather you can't help having a thicker lawn. This fast vigorous growing grass can't help but control weeds. I also believe early correct mowing makes the grass thicker, or stool as turf experts call it.

Eastern experts in turf tell us there is much danger of "damping off" in summer. Damping off is a fungus disease in which the grass just seems to fall over and die. I have not observed any damping off from summer lawns, in fact if we have any fungus disease it has been in spring rather than the warm dry summer.

The old question of whether the chicken or the egg came first or which is more important is still debatable, likewise, which is more important the grass (top or green blade) or the

roots? The green blades are the factory and if they grow the roots *must* also grow to obtain raw material for the factory. Fall lawns are supposed to be ideal for root growth, but I will show you the best lawn one year later if planted in summer.

If you have only so many gallons of water to use, a summer lawn will take much less water from March to March of the calendar year.

Maybe one of my secrets is fertilizer, but I use the same formula in spring, summer or fall. This fertilizer program is: Commercial fertilizer (according to directions) applied when the grass is sown, then rake in grass seed and commercial fertilizer then top dress with a mixture of $\frac{1}{2}$ peat moss and $\frac{1}{2}$ cow manure.

If you make lawns commercially you will have many, many more friends with summer lawns. If you



are making your own lawn do it in the summer and you will have the best, thickest lawn in your neighborhood. Your children can play on it sooner and it will take more abuse.

Two scenes from the attractively landscaped home of the F. P. Storkes at 1123 Baseline Road.



TREES FOR BOULDER

BOULDER enjoys unique horticultural advantages which make it possible to grow a larger variety of the fine trees of the east than probably any other place in the state. While the Grand and Arkansas valleys are of lower altitudes and the southern corners of the state have longer seasons these areas generally

Below, Sycamore. Opposite page, above, Flowering Dogwood; Center, Redbud tree; Below, White Fir, all growing happily in Boulder.



have other disadvantages which restrict their lists of suitable trees.

There is a nice combination of factors which make Boulder's climate so favorable. There are more cloudy hours in the year, more rainfall, more humidity in the air, a less alkaline soil, better drainage, and the tempering and protecting influence from the near-by hills. The list of trees suitable for Denver will all grow in Boulder. In addition to these recommended trees, practically all the "will also grow" trees will not merely survive but will grow quite happily in the town. Most of the oaks, maples and lindens are growing there as well as in the east. There is sometimes a noticeable lack of flowers and fruit due to our late frosts, but the tree itself does fine. The following trees are found growing in Boulder:

Acer palmatum, Cl. Bloodleaf variety of JAPANESE MAPLE.

Acer negundo *interius*, INLAND BOX-ELDER.

Acer rubrum, RED MAPLE.

Betula papyrifera andrewsi, ANDREWS PAPER BIRCH.

Betula lenta, SWEET BIRCH.

Betula lutea, YELLOW BIRCH.

Celtis douglasi, DOUGLAS HACKBERRY.

Celtis laevigata, (*mississippiensis*), SUGAR HACKBERRY.

Corylus cornuta (*rostrata*), Beaked FILBERT—native shrub.

Cornus florida, FLOWERING DOGWOOD—small tree.

Crataegus cerronis, CERRO HAWTHORN—small tree.

Diospyros virginiana, COMMON PERSIMMON.

Fagus grandifolia, AMERICAN BEECH.

Fagus sylvatica purpurea, Cl. PURPLE BEECH.

Fraxinus americana ascidiata, PITCHER ASH.

Fraxinus excelsior, EUROPEAN ASH.

Carya glabra, PIGNUT HICKORY.

Carya illinoensis, PECAN.

Carya ovata, SHAGBARK HICKORY.

Magnolia acuminata, CUCUMBERTREE MAGNOLIA.

Malus coronaria, WILD SWEET CRAB-APPLE.

Morus rubra, RED MULBERRY.

Morus rubra tomentosa, WOOLY RED MULBERRY.

Ostrya virginiana, AMERICAN HOP-HORNBEAM.

Phellodendron amurense, AMUR CORK-TREE.

Populus alba nivea, SILVER POPLAR.

Populus candicans, BALM-OF-GILEAD POPLAR.

Populus tacamahaca, TACAMAHAC POPLAR.

Populus deltoides, EASTERN POPLAR.

Prunus domestica, COMMON GARDEN PLUM.

Prunus padus, EUROPEAN BIRD CHERRY.

Prunus persica, PEACH.

Prunus persica plena, FLOWERING PEACH.

Prunus, Cl. SWEET CHERRY.

Prunus sargentii, SARGENT CHERRY —Japanese Flowering.

Pyrus communis, COMMON PEAR.

Ptelea trifoliata, COMMON HOPTREE.

Quercus andrewsi, ANDREWS OAK—
A native hybrid scrub oak.

Quercus bicolor, SWAMP WHITE OAK.

Quercus havardi, HAVARD OAK —
Dwarf.

Quercus imbricata, SHINGLE OAK.

Quercus alba latiloba, WHITE OAK.

Quercus ilicifolia, SCRUB OAK.

Quercus utahensis, UTAH WHITE OAK.

Quercus borealis, NORTHERN RED OAK.

Quercus montana, CHESTNUT OAK.

Quercus muhlenbergi, CHINKAPIN OAK.

Quercus pungens, SCRUB OAK.

Quercus prinoides, DWARF CHINKA-PIN OAK.

Quercus undulata, WAVYLEAF OAK.

Quercus velutina, BLACK OAK.

Sambucus cerulea, BLUEBERRY ELDER —Tree Elder.

Sassafras albidum molle, SILKY SASSAFRAS.

Tilia neglecta, QUEBEC LINDEN.

Tilia Maximowicziana, MAXIMOWICZ LINDEN.

Tilia platyphyllos, BIGLEAF LINDEN—
Basswood.

Tilia platyphyllos rubra, Cl. REDTWIG LINDEN.

Ulmus alata, WINGED ELM.

Ulmus carpinifolia, SMOOTHLEAF ELM

Ulmus camperdowni, CAMPERDOWN ELM—Weeping.

Ulmus hollandica, DUTCH ELM.



GO NATIVE

By WAYNE NUZUM



Coat-of-arms on the front door

MR. and Mrs. W. B. Pietenpol, Baseline Road at 13th St., Boulder, Colorado, have a front yard full of native plants. The area above Baseline Road has a native field stone retaining wall approximately 3 feet high along the north. Huge rocks or boul-

ders are scattered about as nature laid them down. A circle drive was cut through the rock leaving an island inside the driveway.

The idea of using native Junipers and Kinnikinnick belongs to Mrs. Pietenpol. She consulted many leading experts who all advised against such a project, even her husband said, "No."

First the drive was made and covered with black top. The island formed by the circle driveway was planted to Kinnikinnick which was gathered from the hills in November. Clumps of Kinnikinnick about the size of dinner plates and 3 to 4 inches deep were cut out of sodded areas from private property.

Outside the driveway approximately 300 native ground juniper (*Juniperus communis saxatilis*) were planted also in November. Three years later these ground covers are

General view of front of house from Baseline Road.





Left, the Kinnikinnick lawn among the boulders in the front yard. Right, a formal walled garden hewn out of the rough rocks of the rear yard.

very thick and full. A lodgepole pine was also brought down which is thickening and doing wonderful. All material was gathered from private property with consent of owners.

The lot, about 150 feet by 150 feet, gave room to use large numbers of things, which were planted between the rocks. The huge rocks are of all shapes, very rough and weathered.

Soil is fair to poor with no topsoil added, only once has some leaf mold been added to Kinnikinnick area.

This native material blends in very well with the home of Colorado flagstone in which few "cut" faces were used, leaving brown, red and yellow natural faces. The architecture is the same as used on the Colorado University campus—North Country Italian.

This special lot does not seem to call for a grass lawn but looks much better with one of native material. It is also high enough that the picture window really has a picture from it, in fact the whole town of Boulder.

Left, the front door. Right, view of the town from the picture window.



LANDSCAPING THE SMALL YARD

By ELLA G. WOTEN

MANY of us approach the planting of our yards with fear and trembling, feeling unequal to the task. So after the lawn is in we do little or nothing about it, or perhaps we may start planting without any preconceived plan or idea—a little of this and a little of that. Then, we soon become dissatisfied with our efforts and wonder what is wrong!

Let us begin by agreeing that good planting design is *not* beyond the amateur. We'll make mistakes without any doubt, but we learn by our mistakes, and it is surprising how fast we learn. Besides there is adventure and real fun in learning to express our creative ability in planning our yards so they may meet our needs and become more livable and more beautiful.

There are three or four guiding principles that determine our over-all landscape plan—

With few exceptions every yard is divided into three sections: (1) an "entrance area", (2) the "work and service area" and (3) the "livable garden." These areas are fundamental to our planning, so our first job is to decide where they are to be located.

When we bought our home in Boulder two years ago, the lawn was established, and several large trees were growing in the parking on the east and north. There were three rather high terraces in the yard which we were not too happy about. However, we had a fairly clear field in trying to fit a plan to the lot.

Our three "areas" were practically already located for us by the floor plan of the house and its location on the lot 78 feet by 100 feet.

The "entrance area" or the spot

around the front door which shows itself to the passerby, we disposed of by leaving the expanse of lawn undisturbed and by getting the foundation planting in with the corners of the house considered.

Besides the east front entrance, the long living room has a door leading out to the patio in the yard on the west where the "living area" naturally would be. Here was our real problem. A dusty road on the north was shut out by a stepped down fence which the picture illustrates. In front of this fence we planted a hedge of lilacs and other flowering shrubs, in groups of three of a kind to form a background for spring bulbs and perennials later in the spring and summer.

Our next problem was to screen out a weedy vacant lot west of us. Without being technical and talking about "segregation," "unity", etc., we tried to carry out another fundamental principle of landscaping—that of *framing* our garden — as an artist frames a picture. It is important to shut out the larger landscape so that a garden design can be viewed without the outside competition. So a Russianolive hedge was planted on the west—which will be allowed to grow at least ten feet high—and pruned lightly to keep it in bounds. In front of this silver green hedge we have planted groupings of flowering shrubs, — tall Mockorange, Nanking cherry, *Prunus cistina* for red foliage, Ninebark and multiple Hopa Crab and *Prunus Newport* for height at the corners.

As a central *motif* in the flowering hedge a grouping of seven red flowering Quince was used with five red-leaved Barberry staggered in front of them. This gives the effect of a



slightly lower focal point with the greater depth and height at the corners where the double hedge joins the fence on the north and a second high hedge on the south.

This central pattern of contrasting foliage serves to divide the garden—with a rose bed on the left and perennials to the right. The high hedges make a good background for the flower borders as well as afford protection from the hot afternoon sun and wind.

Shade trees have been put out in this large living area, one fast growing weeping willow, and three slower growing but perhaps more permanent trees to take over later.

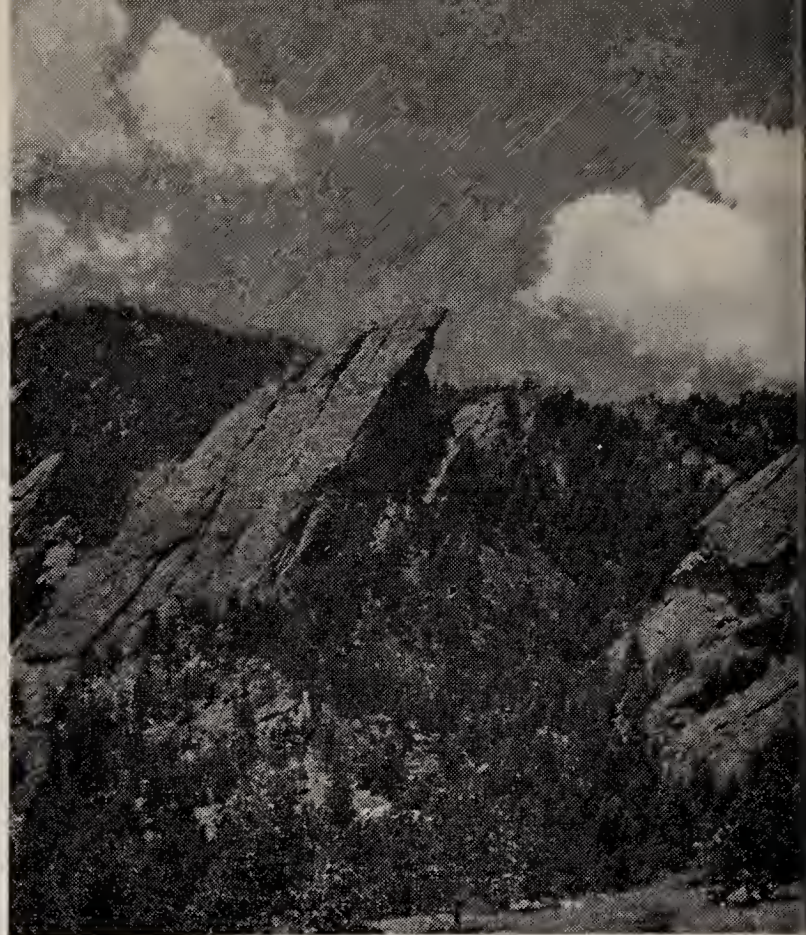
The third problem for consideration was the “service or work area” to the south. A high terrace formed the boundary line between our property and that of close neighbors on the south. In order to secure needed privacy we conceived the idea of planting a hedge of Lilac, High Bush Cranberry, Mockorange, Viburnum, Lantana and Spirea on top of the terrace. This proved to be a quick and attractive screen because of the addi-

tional height of the terrace.

From the kitchen door on the south a service walk leads up steps to the southwest corner of the lot where the incinerator and garbage disposal unit is located. The clothes lines had to be moved out of the “living area” where they had been originally, and placed parallel to the service walk. The east end of this area faces the street at the front of the lot, so to block it out we brought the shrubbery down the terrace to the kitchen entrance and screened the lines by using a tall multiple birch at the east end.

We have learned by mistakes we made, but we do feel that by inclosing our yard on three sides we have gained privacy, together with protection from dust and wind and sun. Undesirable views have been blocked out and lovely backgrounds made for flower borders. We love the many birds that are finding food and shelter in the hedges. So by and large we feel more than repaid for our work and effort.

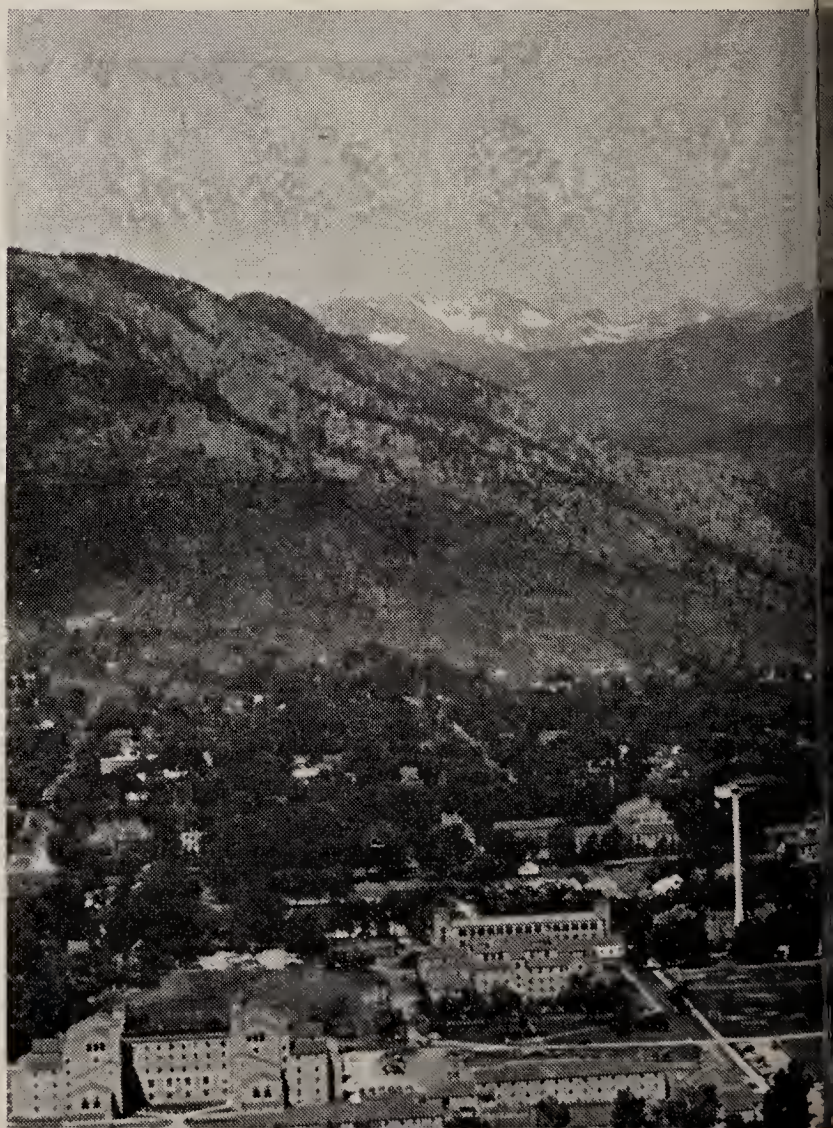
A very helpful book is “Color and Design for Every Garden” by Ortloff and Raymore.

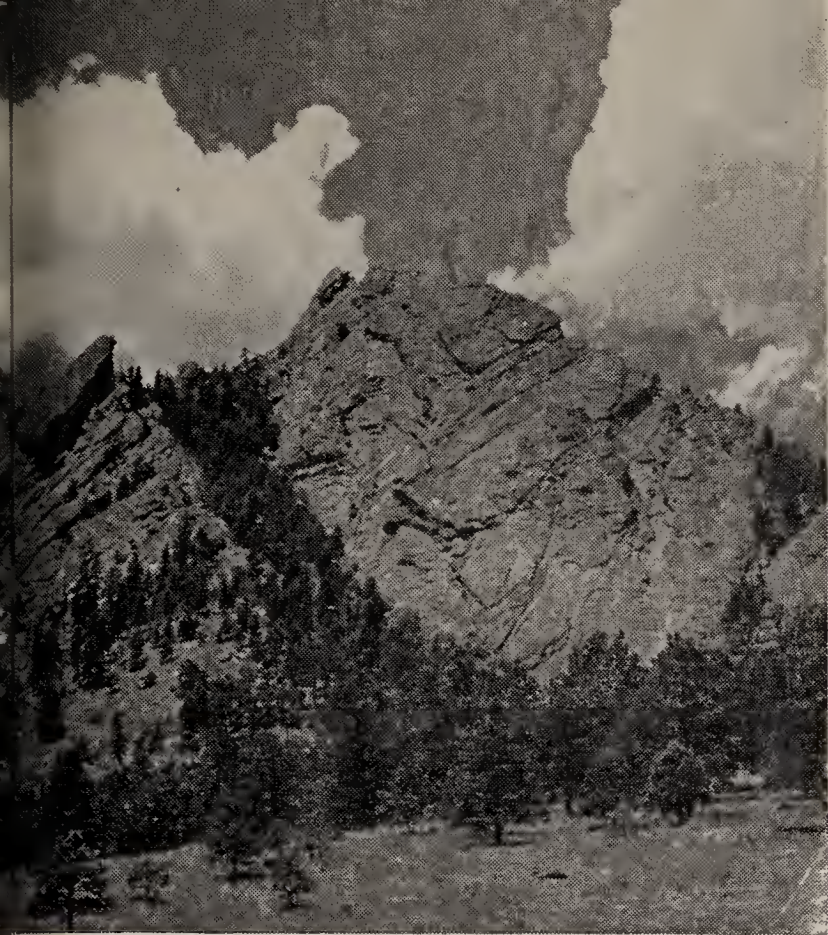


Photos courtesy Hild

THE THEME OF BOULDER

Above, the familiar Flatirons which dominate the town of Boulder. Left, top to bottom: Natural rock garden at 1512 Mariposa Ave., the C. D. Greens, 130 M. Right, top to bottom: Natural rock garden together by the Bly Curtis', 745 15th St. and Helen Harper's garden detail; Bottom, the





amber of Commerce

LANDSCAPING IN BOULDERS

view to the west. Below, General view of the
 boulders left in the gardens of the Earl Swishers,
 Rosa, and unoccupied lot east of the Greens.
 were obtained by doing their front lawns
 L. Helen Harper, 743 15th St. Center, Mrs.
 A. Rohrman front lawn at 1333 Cascade Ave.



ANDREWS MEMORIAL ARBORETUM

By BERNICE PETERSEN

DEDICATED to the memory and achievements of Darwin M. Andrews, pioneer Boulder botanist, a strip arboretum of native plants, shrubs, and trees is being planted behind the Boulder high school on the abandoned narrow-gauge railroad right-of-way. The chief plantings to date are near Broadway and its intersection with the right-of-way.

Mr. Andrews, who died in 1938, probably, in his time, achieved more success in introducing Rocky Mountain native plants to the world than any other horticulturist of this area. For years he made botanical expeditions gathering native specimens for Harvard University. He was known and appreciated by botanists all over the world; in fact botanists in England and Scotland were familiar with his work; and yet he was so quiet and

unassuming that few who lived near him knew of his achievements in horticulture.

To carry out his belief that native plants were more beautiful than many imported from foreign countries, Mr. Andrews devoted much of his time to domesticating native Colorado plants and shrubs for use in the home garden. A birch, poplar and other native plants have been named for him. It is he who pointed out the merits of numerous types of native cacti, heuchera, penstemons and yuccas.

Mr. Andrews also introduced a number of peonies, lilacs, iris and phlox; Colorado Snowcap, the outstanding white phlox, was his introduction. His seedling iris, Candlelight, received the highest rating in the American Iris Society's Symposium.

He was internationally recognized as an authority on rock garden plants. A few years before his death the University of Colorado awarded Mr. Andrews the honorary degree, Master of Science.

To commemorate the unselfish efforts of D. M. Andrews in introducing the beauty and merits of Colorado's native plants to the world, the Boulder Garden Club, sparked by Mrs. Marjorie Brown is leading the drive to establish this arboretum in Boulder.



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The Library Council of the Colorado Forestry and Horticulture Association.



Above, left: Island in front of Frank E. Germann home at 1800 Sunset Blvd. which is landscaped by the Germann's and maintained by them. Right: Hibiscus or mallow marvels in Germann's garden. Above: General view in Germann's garden. Below: C. A. Briggs, 600 11th St. Interesting back patio built into the hillside.



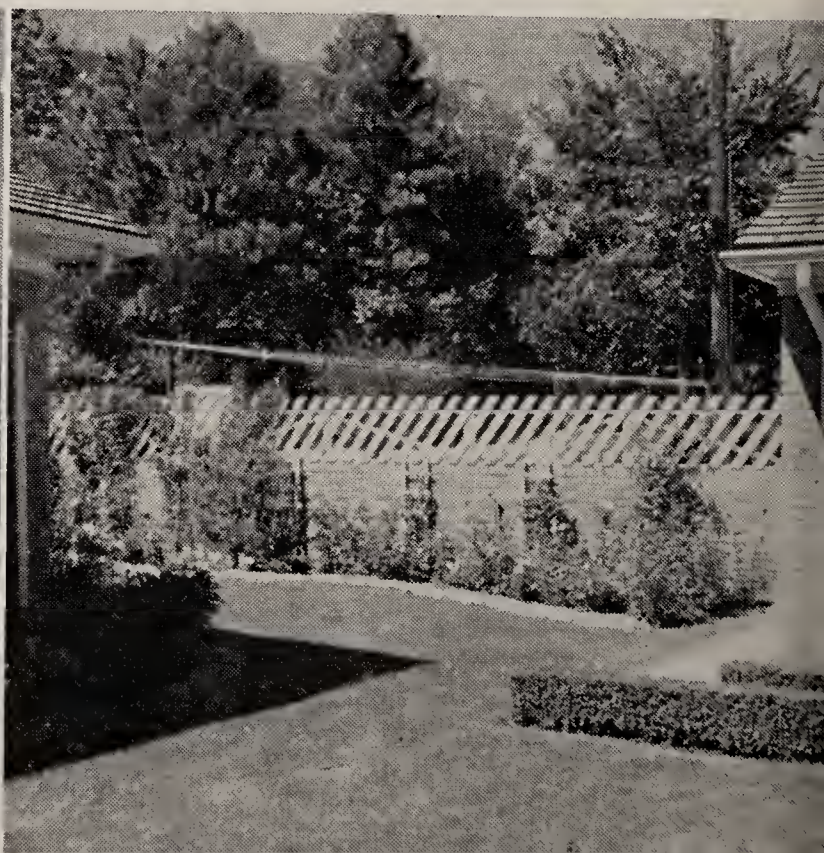


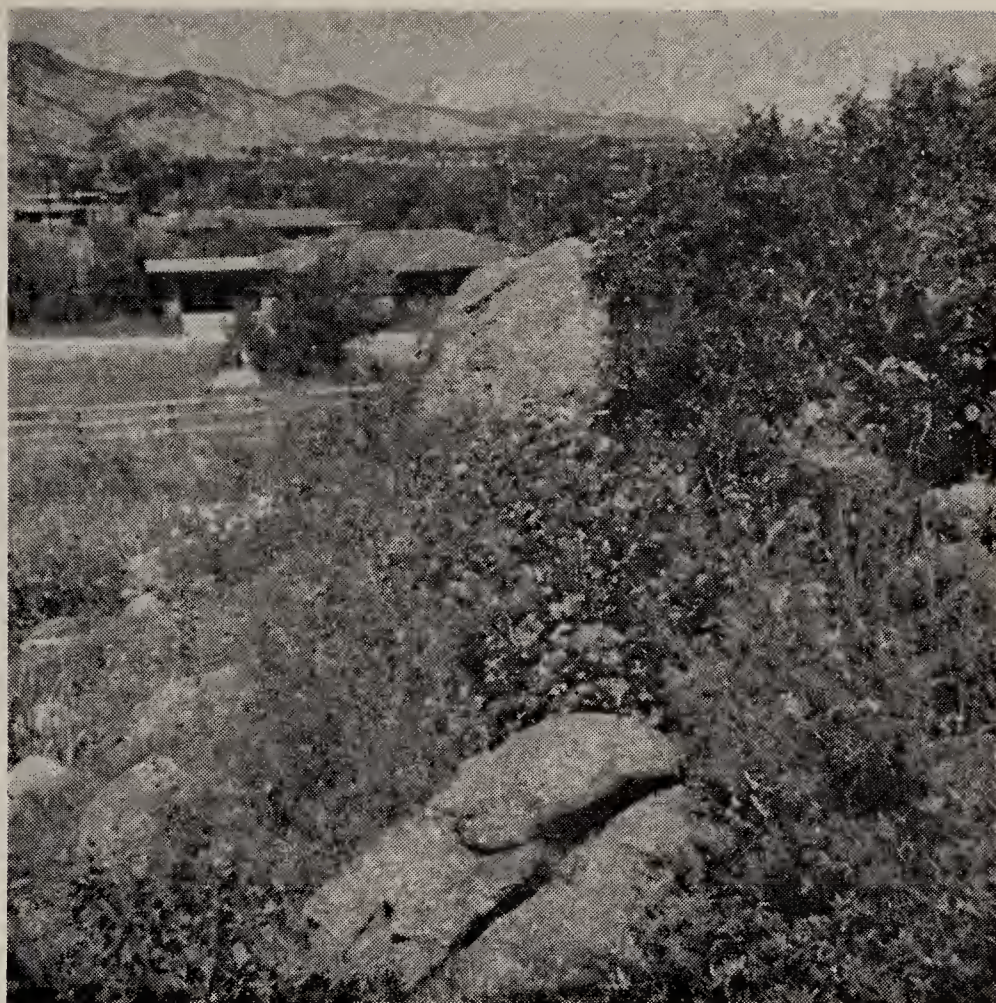
Upper left: Flagstone wall in front of the W. C. Brooks home, 733 13th Street.

Upper right: Tuberous begonias bloom profusely in rear patio.

Below left: Unique handling of the service area outside the immediate garden area in the alley.

Below right: View from patio showing fence and planting in front of service area.





Upper: Plantings made around the natural boulders on the hillside in the garden of A. F. Megrew, 505 Baseline Road. Below: Gateway to the garden.





Above left: Front entrance to the Wade P. Connell home, 883 13th St.

Upper right: Tuberous begonia shelter in the Connell garden.

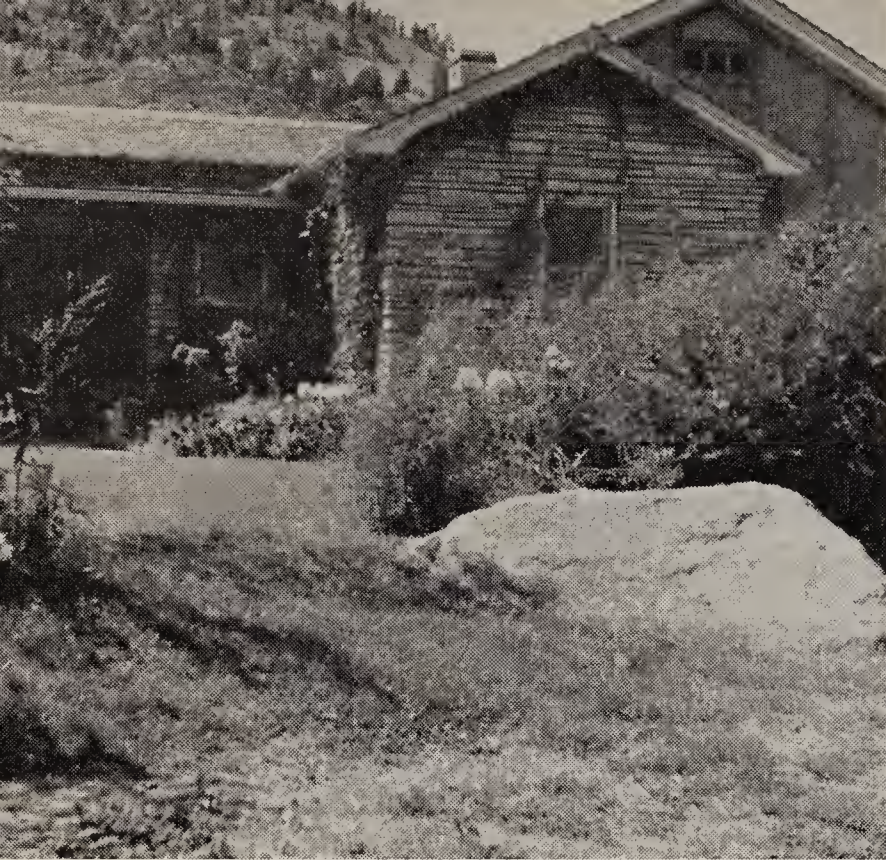
Center left: Interesting use of boulders to make a wall at the E. F. Shoenbeck place, 888 15th.

Below left: Attractive hedge in front garden of the W. C. Brooks', 733 13th Street.

Opposite page: Above, Arapahoe glacier which is the source of the Boulder water supply, photo courtesy Boulder Chamber of Commerce.

Below: Two views from the garden of Col. and Mrs. F. S. Mattocks northeast of Boulder.





Look and Learn Report

By SUE KELLY

This report should have been in the September issue of the Green Thumb, but as you all know, the material for the September issue was in at the printers before the last tour was held. We had a very successful season this year, clearing about \$700 which was added to the funds for Horticulture House. Nice? Yes, indeed, and all of you who attended these tours can feel that you had a part in the work Horticulture House is doing while you enjoyed yourselves on these garden visits! We want to thank you all, and most especially, thank those who helped.

There were Mrs. Charlotte Barbour, who secured all the hostesses for the tours, and had charge of the last one as well—delivered and picked up change and signs and experts! Mrs. Daisy Hastings had charge of the first tour in May, and did such a grand job of it. We hope they both keep up with such good help, for we do appreciate it very much.

As our garden experts, we had: Herbert Gundell, Wendell Keller, Mrs. Carl Bieler, Dr. Helen Zeiner, Mrs. Gertrude Ballinger, George Stadler, Herbert Schwan, Mrs. Ralph Hill, Henry Gestefeld, Sue Kelly, Edmund Wallace, Martin Keul, Mrs. E. C. Horne, Clair Robinson, Mrs. Bertram Barnes, George Kelly, Paul Spencer, Dr. A. A. Hermann, LeMoine Bechtold, William Lucking, M. Walter Pesman, Mrs. E. R. Kalmbach, Mrs. Henry Conrad, Scott Wilmore, Sam Huddleston, Dr. Moras Shubert, Ed Johnson, Charles Wilmore, Jack Harenberg, Helen K. Fowler, Pat Gallavan, Mrs. Bernice Pet-

Left panel: The Willard Page's, 550 Aurora Ave, have created an interesting home in a natural setting. Above, general view of the home; center, view of the foothills from the picture window; below, picnic area along the stream.

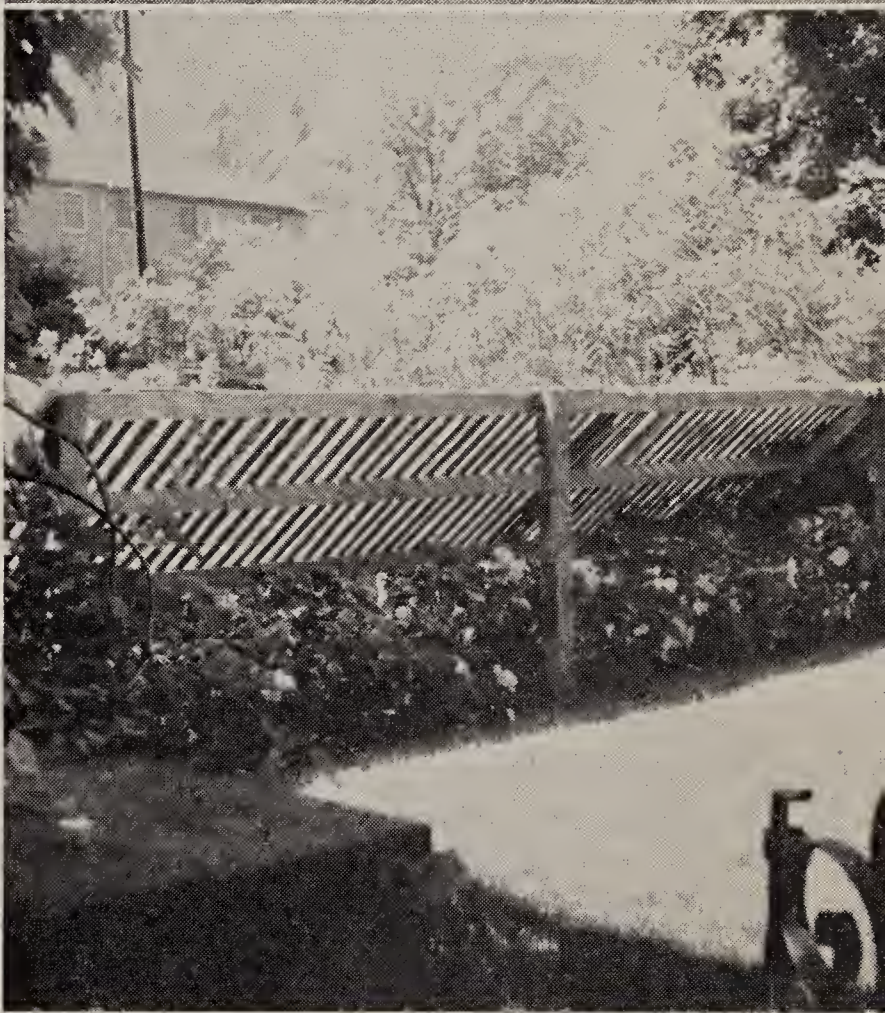
ersen, Prof. L. R. Quinlan, (Manhattan, Kansas) and George Fisher from Tyler, Texas.

As hostesses, we had: Mrs. Harold Libby, Mrs. Doris Weith, Mrs. Wm. Lucking, Miss Elizabeth McNary, Mrs. R. M. Perry, Mrs. Helen Guinn, Mrs. Ruth Waldner, Mrs. J. G. McGrew, Mrs. Hugh Catherwood, Mrs. Evaline Butterfield, Mrs. G. L. Roark, Mrs. Frank McLister, Mrs. Edward Leet, Mrs. Louis Loeb and Mrs. Polly Schlosser, Mrs. J. Kernan Weckbaugh, Mrs. Guy Venrick, Mrs. John Evans, Mrs. R. H. Hughes, Mrs. Geo. Garrey, Mrs. Bernice Cox, Mrs. Norman Gross, Mrs. Albert Patten, Mrs. Ralph Hill, Mrs. M. F. Carney, Mrs. Robt. Lehman, Mrs. William Powers.

Many of these people helped more than once during the summer and visitors to the gardens are beginning to recognize them from year to year. and come and visit with them as well as to see the gardens. I'm sure many friendships will be made that will be a pleasure to those who make them. and will be—shall we say, "An extra bonus"?

Talking about bonuses — we had several fine gardens added to our list this summer: The William E. Voot garden at 3060 S. Colorado Blvd. and the Charles L. Binna garden at 4241 W. Byron Place. We certainly want to give these garden owners special thanks for letting us show them on such short notice. They were certainly well worth visiting. and we hope we can have them again another year. We do hope all the garden owners enjoyed having you all visit. and we hope the list of gardens and visitors will grow every year.

Right panel, top: Rose garden and clipped blue spruce hedge at the home of Dr. and Mrs. H. A. Alexander, 750 Cascade Ave. Center, Effective but inexpensive is the shelter made for her tuberous begonias by Mrs. Viola Ekelev at 703 11th St. Below: Garden of J. M. Hunter, 1505 Mariposa Ave.



ALPINE TREASURE HUNTING

WILLIAM A. WEBER

University of Colorado Museum, Boulder, Colorado

HORTICULTURAL enthusiasts who travel abroad never consider a trip complete until they have seen or collected the Edelweiss on the high cliff-sides of the Swiss Alps. This, more than any other single species of plant, it seems, has become for them the pot of gold at the end of the rainbow, the rarity of rarities. The Edelweiss has been mentioned so many times in literature as a symbol of the rare and unattainable that it is very generally understood to be the ultimate goal of alpinists who track down the wild-flowers of the high country.

Edelweiss, oddly enough, is not the most attractive of plants, being a somewhat dwarfed and woolly-leaved version of our American Pearly Everlasting, or of our Pussytoes. In fact, I think that most people must be just a little disappointed when they finally see a plant of Edelweiss, and wonder what all the fuss was about. Nevertheless, the quest for the rare plants of the alpine goes on, even though many species, like the Edelweiss, are rather inconspicuous and unassuming, for there seems to be a tremendous thrill awaiting the botanist whenever he happens upon one of these hardy little wild flowers.

Just what is there about "alpines" that makes them so exciting to botanists? First of all, they are rare, occurring in only small colonies or one at a time; second, they grow in some of the most scenic and sometimes inaccessible parts of the mountains; and third, most of them are the last survivors of an invasion of the arctic flora which occurred thousands of years ago. This last reason makes these alpine plants an integral part of

the great historical events of geologic time, and when we find some of these rare plants, we automatically are put in touch with the prehistoric past, so the experience is very much like that of discovering the remains of a mammoth or dinosaur. It often happens that these little plants have gone unnoticed for years, and perhaps are species which have never before been found in our country. There is, then, the thrill of having been the first on the scene.

There are, in Colorado, about a hundred species of plants that we may call truly alpine. That is, there are about this many species which do not grow except above timberline. A few of these have their closest relatives in the foothills or plains at lower altitudes, and these species presumably have originated as high altitude races of the lower level forms. The yellow-flowered, sunflower-like *Rydbergia*, *Hymenoxys grandiflora*, may be related in such manner to the low-altitude *Hymenoxys* species of the southwestern deserts. *Gilia globularis* of the high mountains around Fairplay seems to be most closely related to *Gilia spicata* of the plains and foothills.

The great majority of our alpine plants, however, are directly related to species belonging to the flora of the far North. Some of these species which we find so commonly in Colorado would be well known to an American Eskimo on Baffin Island, or to a native of northern Siberia, or to a Laplander, for many species are found around the world in northern latitudes. In general, a person who is well-informed on the alpine plants of Colorado would be very much at

home with the flora in almost any area in the world north of the Arctic Circle.

A few of our alpine species are missing from many arctic regions, but have their closest relatives in the Himalayas. The big-rooted spring-beauty, the dwarf blue columbine, and the Alp lily, *Lloydia*, are a few examples. Presumably these plants were at one time more widely distributed over the northern hemisphere, but subsequently were exterminated in all but the isolated mountain ranges in which they now grow. One of the reasons our Colorado alpine areas are so exciting is the fact that a handful of them are found nowhere in the United States save in a few places in Colorado, and the next nearest localities where they may be found are along the shores of the arctic sea in Ungava, or Keewatin, or Baffin Land.

The first question which naturally comes to mind, then, is, "How did these rare arctic-alpine plants get to Colorado?" Did the same species originate twice, in widely separated areas? The possibility of this happening is extremely remote, and in most instances other explanations are much more plausible. Did the migrating birds carry the seeds southward? If so, the birds had to carry complete assortments of seeds of plants which are usually dispersed in very different ways; in fact, whole communities of plants had to be exactly reconstructed by chance, and this is improbable. Did the wind bring them far afield? If this were so, we should find that the concentration of arctic plants decreases with increasing distance from the original source of supply. This does not happen. However attractive the above possibilities appear to be to some people, the real answer seems quite obviously to be tied up with the

great changes in climate which came over the North American Continent when, in ancient times, the Ice Sheets spread and retreated many times over the land. The movement of the glacier, which was really very slow, permitted, and in fact, forced, the plant communities of the Arctic to move southward with it. Although the Continental Ice Sheet did not reach Colorado, the Arctic flora moved south in the mountains, where a truly Arctic climate then prevailed, and when the glaciers retreated for the last time, these plants remained on the alpine areas of our mountains. In a very few places, the environmental conditions are still extremely similar to those in the far north, and it is in these few choice spots that we find the really rare alpine species. These are the true relics of the glacial age.

The hunt for rare alpine plants used to be more or less hit-or-miss. As our collections accumulated, however, patterns began to emerge, and now the discovery of alpine relicts is becoming more systematic. Dr. C. W. T. Penland, of Colorado College, Dr. Walter Kiener, once a guide on Long's Peak, and Mr. R. C. Barneby, of Wappingers Falls, New York, have pioneered in this work in recent years. We used to look for alpine rarities almost anywhere on the tundra. Now we look for high lakes, above 12,000 feet altitude, of a large size, with gentle shore-lines permitting a good growth of moss around the sandy, slowly-flowing inlet streams. Areas which get only the morning sun, for example, north-east exposures, seem to be very good. For some reason or other, the rare species seem to be found most often in areas in which the main core of the mountain range runs east-west rather than the usual north-south; thus the Mt.

Evans and Gray's Peak region, the Hoosier Pass region, and the high country north of Gothic, are especially exciting areas.

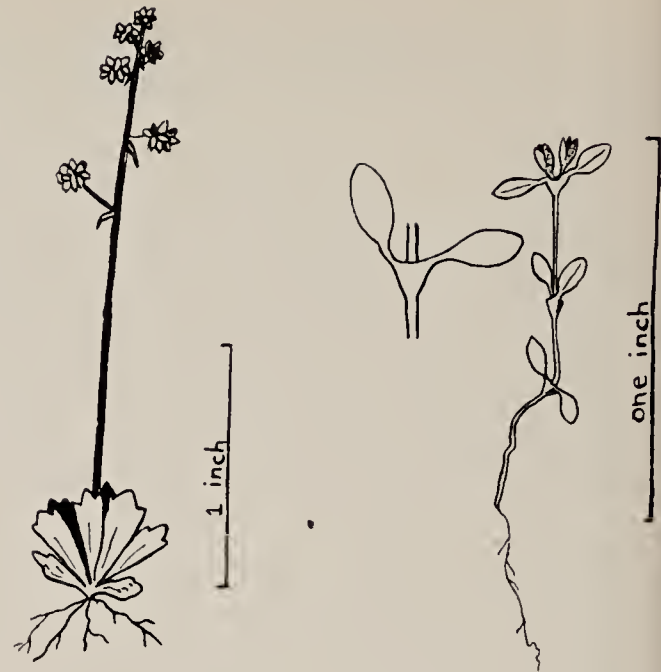
Dr. Penland has reported on his discovery of *Armeria maritima*, relatives of which we grow in our rock gardens as Statice. This species is found no nearer than Hudson's Bay, but occurs here in our Colorado mountains. *Eutrema Penlandi* and *Braya humilis* are members of the mustard family with similar distributions, except that the *Eutrema* is sufficiently different from its nearest Arctic relative that it is considered a new species and was named for its discoverer. The grass, *Phippsia algida*



Braya humilis.

has recently been rediscovered after having been missing since its first collection in Colorado in 1875.

This year we have made several other notable discoveries. Two of these are illustrated here. The first is



Saxifraga foliolosa

Koenigia islandica

Koenigia islandica, which, as its name implies, was first discovered in far-off Iceland. *Koenigia* is a relative of buckwheat, but it is found only in wet sandy places north of the Arctic Circle. In July, we found it on the shore of a high lake in Colorado. Fortunately we were accompanied by a Norwegian botanist, Dr. Eilif Dahl, whose keen eye spotted it and who recognized it for what it was. This plant is a tiny annual, so small that when fully grown it is only a half-inch tall, flowers and all, with a slender unbranched stem having a few pairs of tiny leaves. A week or so earlier I had passed it over as a seedling of some unfamiliar species. When we consider that this plant, in order to survive, has had to germinate, develop, and set seed every year for at least 15 thousand years at this place where we found it, we begin to feel a sense of the tremendous history of the area.

Near the site where we found *Koenigia*, we also discovered a little alpine saxifrage, *Saxifraga foliolosa*, which has been found in only one other locality in the United States, on Mount Katahdin, in Maine. This little fellow is very inconspicuous because the flowers have been converted

into clusters of little green, bulb-like structures. Rarely a single flower is produced at the top of the stem; we haven't found any of these in our Colorado collections. This species was found here in 1873 by E. L. Greene, who later became prominent as a botanist in California. His specimen, a single small plant, was so fragmentary that its identity has always been in doubt until we found ample material this year.

A party of botanists hunting for alpine treasure must be a ludicrous sight to the uninitiated. Visualize four or five full-grown men suddenly dropping to all fours, noses to the ground. Then as they pass around some little green thing too small to see with the unaided eye, hooting, squealing, and pounding each other on the back as another "first" is scored, any normal person would be

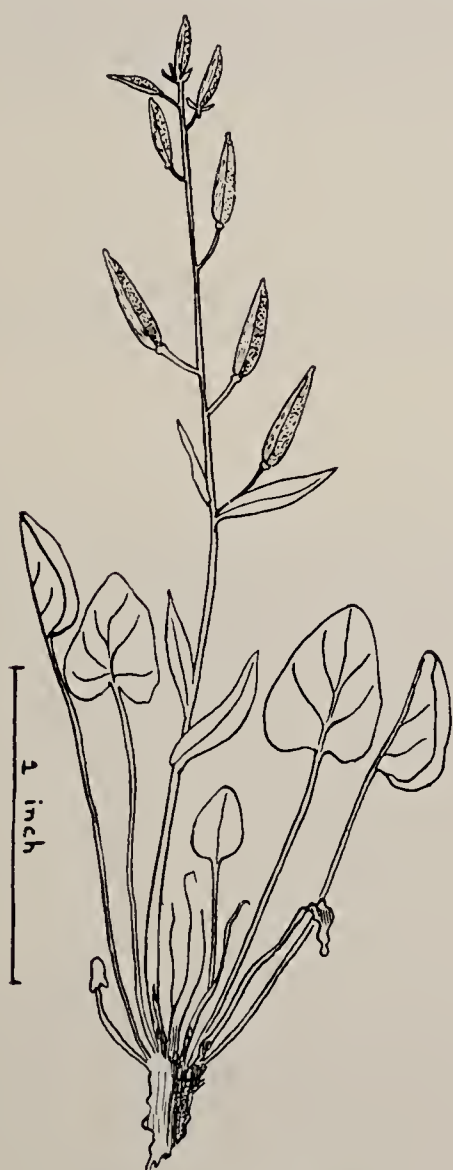
tempted to call the authorities. Yet that's what one must expect when a bunch of botanists go treasure hunting for alpenes. Believe me, "There's gold in them thar hills!"

All plant lovers will want a copy of Dr. Weber's new book, "Handbook of the Plants of the Colorado Front Range". Ed.

NEW MEMBERSHIPS

August and September, 1953

- Mrs. D. E. Clark, 5090 W. 6th Ave., Denver
 Mrs. Robert Collier, 200 So. Washington St., Denver
 Mr. and Mrs. Lee Dishlacoff, 1800 So. Tejon St., Denver
 Mr. M. B. Fitzgerald, 1201 Xapary, Denver
 Mrs. C. R. Garland, Sr., 2867 Gray St., Denver 14
 Mrs. Francis Goddard, 2308 So. Emerson St., Denver
 Mrs. Edwin B. Harmon, 741 Hudson, Denver
 Dr. John L. Lightburn, 5698 Greenwood Pl., Denver
 Mrs. H. E. Mabie, 2009 Wyoming Ave., Pueblo
 Mr. Harvey Radetsky, 1339 Forest St., Denver
 Mrs. E. T. H. Talmadge, Jr., 2218 Ash St., Denver
 Mrs. George Williams, 506 Columbia Rd., Colorado Springs
 Mr. E. B. Wood, 945 So. Milwaukee Way, Denver
 Mr. William Stephen Wood, 2725 Steele St., Denver
 Mr. Stanley McLane, 6331 Agnes, Kansas City 30, Missouri
 Mr. H. J. Wannenberg, 3501 Cook St., Denver
 Mrs. Dorothy H. Haskins, 4050 So. Fox St., Englewood
 Mrs. Kenneth W. Curlee, 401 Columbine, Sterling
 Mr. W. A. Lanby, Box 335, Sterling
 Dr. Portia M. Lubchenco, 830 Columbine, Sterling
 Mrs. A. F. Costello, 521 So. Williams, Denver
 Mr. J. C. Hodges, Rt. 3, Otis, Colo.
 Mrs. Harry C. Schnibbe, 778 Fairfax St., Denver.



Eutrema penlandii.



Above: Park site and recreation area planted and maintained by the Niwot Garden Club, Niwot, Colorado.

LONGMONT AND NIWOT GARDENS

Below: H. J. Herber, Longmont, Colo. has done some interesting landscaping in his garden.





Above, attractively landscaped new school building in Longmont, Colo.

Below, Interesting treatment of planter for tuberous begonias and shady plants in the garden of the Robert Morrisons at 530 Bowen Ave., Longmont.

Right top: Perennials and annuals mix happily in the garden of the Dr. Eugene Pfiles, 1026 Corey, Longmont.

Right center: The nicest alley in Longmont, according to Mrs. Pfile which is back of her garden and her neighbors.

Right, below: View from the patio of the neighbor across the alley on Collyer St.



PIN-CURLS FOR BINDY

By DAISY HASTINGS

(Bindweed must be feminine—it really is a clinging vine!)

Two years ago I found three little bindweed plants that had snuck into my southeast perennial bed. Since I couldn't spray them without killing the flowers, I pulled them up—all that year and all last year. They loved it, and came up ten fold that year, a hundred fold the next year, and a thousand fold this year, all over the southeast bed, and two in the south bed and three even clear around on the north side of the house. In their original bed they were twined all around iris, phlox, poppies, the background shrubbery and the fence.

Now after much trial and error, I've worked out a system that is really working. I roll each vine up like a pin-curl, put a bobby-pin on it, and stick the bobby-pin in the ground. Then with a half-inch wide paint brush (dime store, 19c) and a can of 2,4-D (the directions on the can say 2 tablespoons to a gallon of water—I'm tired enough of that bindweed that I use it a little stronger, say about 2 tablespoons of the 2,4-D with 4 tablespoons of water!) I go out once a week and paint each pin curl. A week later when I go back, each one that has been painted is all dried up, and I paint any new ones that have

come up. In just four weeks, of a couple of hours of work each week, I've eliminated all of the ones on the north and south, and have only half a dozen left in the big southeast bed. Ah, Life Can Be Beautiful!



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STATE PARKS ADVISORY COUNCIL APPOINTED

By FRED R. JOHNSON

A STATE Parks Advisory Council has been appointed by the State Board of Land Commissioners which, under the Session Laws of Colorado for 1937, is also designated as the State Park Board. This action, announced by Mr. A. M. Ramsey, President of the Colorado State Board of Land Commissioners, was taken at the suggestion of the State Parks Committee of the Colorado Forestry and Horticulture Association in cooperation with the Colorado Committee on Planning and Zoning.

Mr. Ramsey stated that those who have agreed to serve on the Advisory Council include Mrs. Charles R. Enos of Littleton; Wm. A. Grelle, Executive Director, Colorado Municipal League, Boulder; Harold A. Hubler, National Park Service, Denver; Jos. W. Penfold, Western Representative, Isaak Walton League, Denver; Mrs. Frank Neal, Chairman, National and Colorado State Blue Star Memorial Highway, Lafayette; Eugene Hansen, President Colorado Recreation Association, Grand Junction; Prof. J. V. K. Wagar, Forest Recreation & Wildlife Conservation Dept., Colorado A & M, Ft. Collins; D. S. Nordwall, U. S. Forest Service, Denver; M. Walter Pesman, Landscape Architect & Land Planner, Denver; J. D. Hart, Ass't Director, State Game & Fish Commission, Denver; Fred R. Johnson, Colorado Forestry & Horticulture Association, Denver.

The functions of the Advisory Council, as outlined in the 1937 law, are "to consider, study and advise in the work of the Board for the extension, development, use and maintenance of any areas which are to be con-

sidered as future park or recreational sites or which are designated as park or recreational areas."

The legislature appropriated funds for the appointment of a State Park Director and other expenses of the Park Board for the first biennium following the approval of this Act on April 15, 1937. Thereafter, the legislature provided no funds and the law has been a dead letter in the Colorado statutes.

In 1951 and again in 1953, our Association sponsored bills before the State Legislature, providing for a new State Parks setup, but the legislature refused to act. Last spring a committee, consisting of Mrs. Chas. Enos and Fred Johnson of the Association and Hal A. Storey of the State Planning Commission had a conference with the State Land Board to see if something could be done under the 1937 law. We found the board members cooperative and interested, but unable to act because all its funds are earmarked for specific activities.

They agreed to appoint an advisory council under the authority previously quoted, feeling that such a group can be helpful in creating public sentiment for a state parks system in Colorado. This state is one of a very few which has no state parks. It is true that the mountain sections of the state have quite a number of National Parks and Forests as well as the Colorado State Forest east of Walden. However the large area of plains, comprising approximately half of the total area of the state should have some recreational places for its many citizens and travelers.

An organizational meeting of the

council will be held early this fall and it is hoped that this group of citizens will be able to do some planning that will be productive in the establishment of a State Parks system in Colorado. A number of tracts may be made available by donation for park purposes if a state agency is available to protect, develop and administer them.

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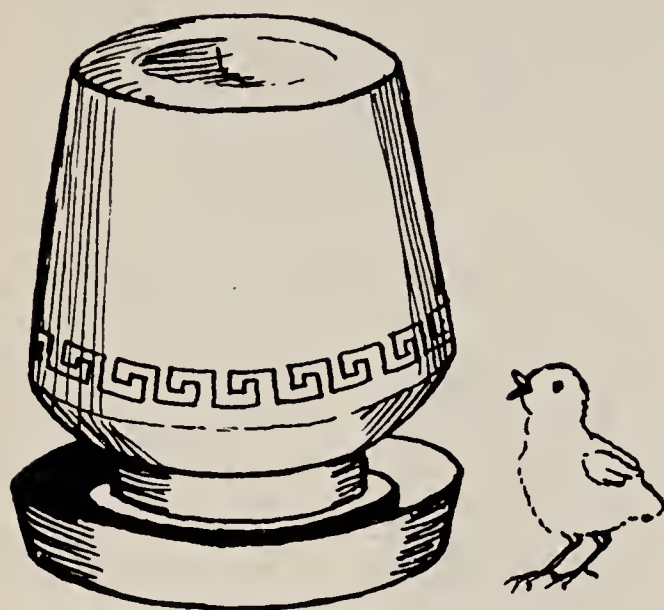
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DOROTHY A. CHAMBERS



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an ideal garbage container which is insect-tight, and sanitary. It can be easily painted so the contents won't show. Some of them even have attractive designs as well as pleasing lines.

In one of these jars you can collect scraps for several days before it gets too bad, then all you have to do is rinse the jar with a few drops of bleach in the water and it is clean and fresh. This jar costs less but will outlast several step-on cans.

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OCTOBER GARDENING CHECK LIST

CLEAN out the dead stems of annuals as the frost kills them. Soak everything after they have stopped growing and dropped their leaves. Cut back the Chrysanthemums and leave the tops fall for winter protection. Look for any aphids left on any plant and spray to kill them. Put away the lawn mower after having it repaired and ready to go next spring. Clean up and repair the other garden tools. Make a place to keep all the tools and equipment used in the garden.

Plant the fall bulbs such as Narcissus, Tulips and Crocus as they are available.

Plant or transplant Peonies and Bleeding Heart.

Divide and transplant, as necessary the Fall Asters and Shasta Daisies.

Take up the Glads, Dahlias, Tuberous Begonias, Cannas and Amaryllis before freezing weather.

If not already done, bring into the house the Poinsettias, Hydrangeas and other tender pot plants that have been out under the shrubs all summer.

Gather seed from the good annuals that you had such as Cosmos, Zinnias, Marigolds and Larkspur.

Bring in the ornamental gourds and hang to dry.

Fertilize and spade the garden where the annual flowers and vegetables were.

Do any necessary pruning on shrubs which have become scraggly.

Protect shrubs and low evergreens from heavy snow damage in winter.

Trim trees as necessary before the first heavy snows.

Start a compost pile with the leaves and plant tops that have been raked up.

Paint and repair the garden furniture, fences and lattice work. Set up stakes and make notes to remind you of the transplanting and remodelling needed in spring.

Set up some shade or wrap the trunks of new tender-barked trees such as Mountainash, Linden and Hard Maples.

Set up shade southwest of borderline things like Arborvitae, Weigelia and Mahonia. (I know that some of you are gambling with them.)

Trim ragged grass edges and give the hedge a last haircut.

If you have a rose bed to cover later, cover a patch of open soil to keep it unfrozen for this use until needed.

Only cut back the roses enough to make them look well and avoid wind whipping. Save most trimming for spring.

Go to the hills and see the beautiful fall color of the Aspens and other natives.

Visit an adjoining town and see what can be learned from the gardens there.

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The Green Thumb

Vol. 10

NOVEMBER, 1953

No. 11

EL PASO COUNTY ISSUE

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THE COLORADO FORESTRY AND HORTICULTURE ASSOCIATION

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1355 Bannock Street

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Denver 4, Colorado

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Tabor 3410

You Still Can't Get Something For Nothing

It is to be regretted that there has been a new outburst of questionable horticultural advertising this fall. It does not seem that intelligent people would fall for the extravagant claims of some who try to sell roses or tulip bulbs or other plants with fabulous and impossible claims. There are no roses known that will grow 15 feet in one season, in any locality, with hundreds of roses covering them, all summer; yet people still order them. The average bloom from one prominent company's ad for "100 tulip bulbs for \$1.98" was 6.

Of a dozen or more of these out-of-town bargain offers that the Better Business Bureau sent for and we tested out last spring not a single one gave a reasonable return for the money spent. There were three main reasons. 1. The plant was one not ordinarily hardy in this area, such as Tuliptrees and Magnolias. 2. The plants were very inferior in size and quality. 3. The plants were so packed and shipped that they were either completely dried up and dead when received, or they were rotten from being moist and packed up so long.

The only good guarantee of getting your full garden dollars' worth is to buy from firms who KNOW what will grow here, who can advise you how to care for it, and can deliver it to you in good, healthy condition. The best way to select a good nurseryman is to inquire of your friends as to whom has given them a fair deal and buy from this firm. From sad experience I would question all glowing out-of-town nursery advertisements and all door to door canvassers. The reliable firms do not have to resort to these practices.

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Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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NOVEMBER SCHEDULE

Nov. 11. Wed. Horticulture House at 8 P.M. Regular meeting of the Organic Garden Club.
Nov. 10. Tues. Horticulture House at 8 P.M. William Lucking will show some of his fine kodachromes of Aspen in fall color, taken this year and previous years. They are extra fine pictures which should be appreciated by everyone.

No outdoor trips scheduled in November, but may be arranged on request.

NEW MEMBERSHIPS

September and October, 1953

Mrs. Vernon Taylor, Jr., 2500 So. Sheridan Blvd., Denver 14
Mrs. Mary B. Basart, 1627 Geneva, Aurora
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Mrs. Joseph Hewitt, Elk Hollow Ranch, Saratoga, Wyoming
Mrs. Charles B. Abbot, 1915 El Parque, Colorado Springs
Mrs. Donn J. Barber, 1930 So. 23rd Ave., Greeley

EL PASO COUNTY ISSUE

We appreciate very much the good cooperation that we have had in assembling the material for this issue. Mrs. Marshall Sprague on an assignment from the Broadmoor Garden Club has solicited most of the stories, secured some of the pictures and some of the ads. Each of those who have submitted stories have contributed greatly to the value of this issue. Mrs. Pauline Steele and Mrs. Edmund Wallace have contributed valuable art work.

DISCIPLINE YOUR GARDEN

By EDNA JANE SPRAGUE

THE first thing an amateur gardener learns (sometimes the hard way!) is that a garden has to stop somewhere. If allowed to run off into space the garden design, no matter how well planned otherwise, is not effective.

True, sometimes space itself is used as a boundary for the garden, as when the planting runs down toward the sea or a river, or when the emphasis is on a mountain view. Usually, however accents, architectural or otherwise, are used to emphasize the division between garden and what lies beyond, and to point up the fact that the garden is contained within a calculated area. Discipline such as this is a major factor in all art. In the art of gardening it is no less important than in writing or painting.

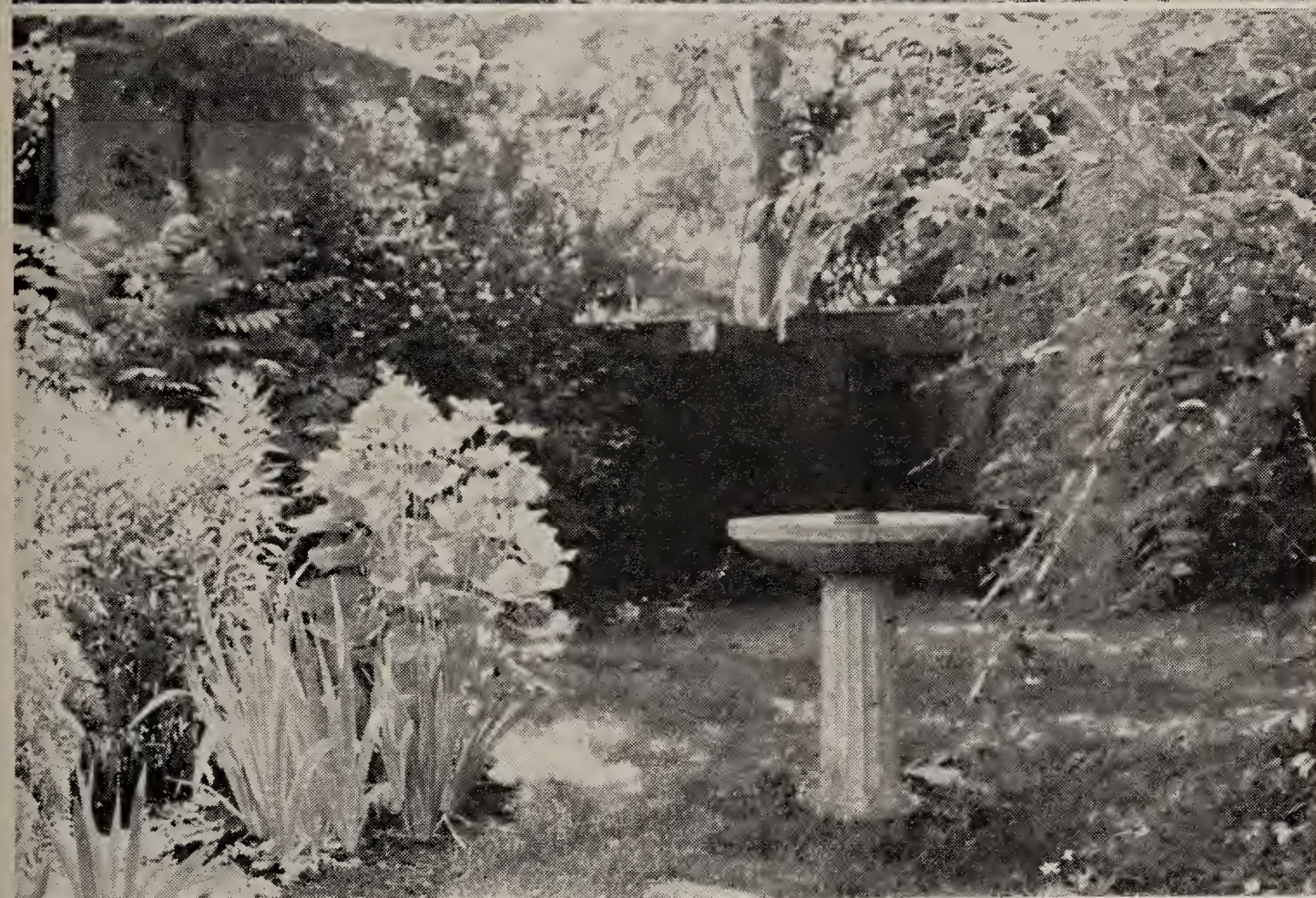
In writing, a period puts a stop to things; for gardening, a wall may do it. In earlier times walls were built around gardens to protect them and to keep out dangerous intruders. People gradually learned to train fruit trees against a southern wall surface to stimulate spring growth. The inescapable charm of a wall as background for flowers and foliage was increasingly observed. So the wall was retained after the original use to which it was put gradually became obsolete. Today the wall, of concrete, masonry, stone, brick or whatever, is one of the most widely used of aids to discipline in the garden.

The fence is another. A fence is really just a less expensive version of a wall, and performs the same functions. Nowadays so many materials are available for fencing that the garden maker has his choice of dozens of attractive types and can practically

have his fence customtailored to suit his garden. A fence, like a wall, may be used as an architectural feature of a garden as well as a boundary. It may, on the other hand, be so unobtrusive as to be almost unnoticeable except that if it were not there the form of the garden design would be lost, or damaged. Certain types of fences are ideal for backgrounds in the small garden, because of their delicacy of form. Fence types vary from rustic weathered stockade, around the informal planting, to picket types enclosing door-yard gardens. Split rail fences are still popular for farmlands. Wrought iron is used on terracing. The plain board fence often comes in the category described above—the unobtrusive fence.

Below: Attractive little on-the-street garden of Mr. and Mrs. George Nix, enclosed by split cedar fence. Right: Three scenes in the garden of Dr. and Mrs. J. L. McDonald, showing backgrounds of concrete wall, board fence and shrubs.







Attractive and effective garden background of clipped Spruce in the garden of Mrs. William Duncan.



Board fences are often painted dark green to harmonize with foliage and are used as a background behind planting to give privacy and a feeling of solidity to the boundary of the garden.

Massive plantings of evergreens and specimen trees are often used as a background for the flower garden. This way of defining the garden is obviously more adaptable to large areas where the proper scale of planting can be realized.

On a smaller scale planting can be used as background material in the form of hedges. A hedge is still another version of the wall, or fence, but because it is made from living shrubs may have a more pleasant color and texture than the former

and may be more easily incorporated in the garden.

Whatever type of boundary the gardener may choose, he will find his garden the better off for the discipline of an attractive background. He will discover that a wall not only keeps out dogs, cats and small boys, but it makes a lovely frame within which the gardener can create his garden picture.

Background in the garden of Mr. and Mrs. Eugene Lilly is effected by the use of masses of Spruce and other trees.



CAMELS

By KATHLEEN MARRIAGE

WHAT are we going to do about water for our gardens? Rainfall on most of Colorado has been low since 1947. Several communities are adding more and more residential subdivisions to say nothing about new industrial areas. All require water.

While we talk about bringing water via tunnels from the wet western slope and about seeding clouds we might begin at the other end and see what may be done about having gardens that require less water. 'Garden' here is not limited to peas and beans or zinnias; it is used in its inclusive sense to cover all cultivated vegetation.

Since trees, shrubs and lawn are the important groundwork let us see what we can do about them, considering especially new small homes on small lots. Most of the trees and shrubs usually planted on home grounds come from regions of much rainfall and humid air. Those native in the Rocky Mountains are accustomed to a camel existence, in fact many of them go much longer than a week or even a month without a drink, and like it.

Here are a few of the most useful trees and shrubs for small grounds—and we are telling only of those we have grown in captivity:

Juniperus monosperma, Oneseed Juniper, a good all-year-around lively green tree, uninviting to most insect pests.

Pinus Edulis, Pinon Pine, when mature forms an attractive umbrella-shaped tree fifteen feet high. These two resent over-watering and they sulk if planted in the shade of big deciduous trees.

Juniperus communis, a good low

evergreen, prefers shade both winter and summer.

Mahonia repens, a first rate hardy evergreen ground cover content to grow either in rich leaf mold or to hang by its toes from a sunny gravel bank.

Now for Small Deciduous Trees

Shepherdia argentea, Buffaloberry, like a miniature Russianolive with narrow grey leaves, grows to a height of fifteen feet or more.

Quercus gambelli, Scrub Oak, grown as a single individual makes a sizable tree of marked character. Hard to transplant? Yes, but with care and due respect for its preferences this can be done. The easy way is to pick ripe acorns late August or early September, plant them soon one to two inches deep in a mixture of peatmoss and sand, water thoroughly and cover with a layer of spruce branches. Transplant the young seedlings as soon as they have three or four leaves the following spring.

Now For Shrubs

If there is room for varieties large when mature, *Rubus deliciosus*, Thimbleberry, is most satisfactory if—and this is a big 'if'—in well-drained soil and allowed to dry off in late summer. Its large clear single white flowers on arching branches make a pleasing picture. Unless there is room for more than one of these better omit them. The spotty effect of, say, ten shrubs of ten different varieties is restless and altogether undesirable.

Used as a facer for taller shrubs our native Mock Orange (horrid word that "mock") *Philadelphus microphylla*, is hard to beat. It is a petite well formed, well behaved shrub two to three feet high, gener-

ous with its white flowers early in June.

Another decorative shrub from the dry country is *Fallugia paradoxa*, Apache Plume, again with single white flowers, inconspicuous foliage, bark silvery white, most attractive planted against a background of evergreen. In the wild it often poses against a group of Pinon trees with most pleasant effect.

Then as soon as its flowers are gone it produces and holds until early winter seed heads carrying long plumes of delicate rosy pink.

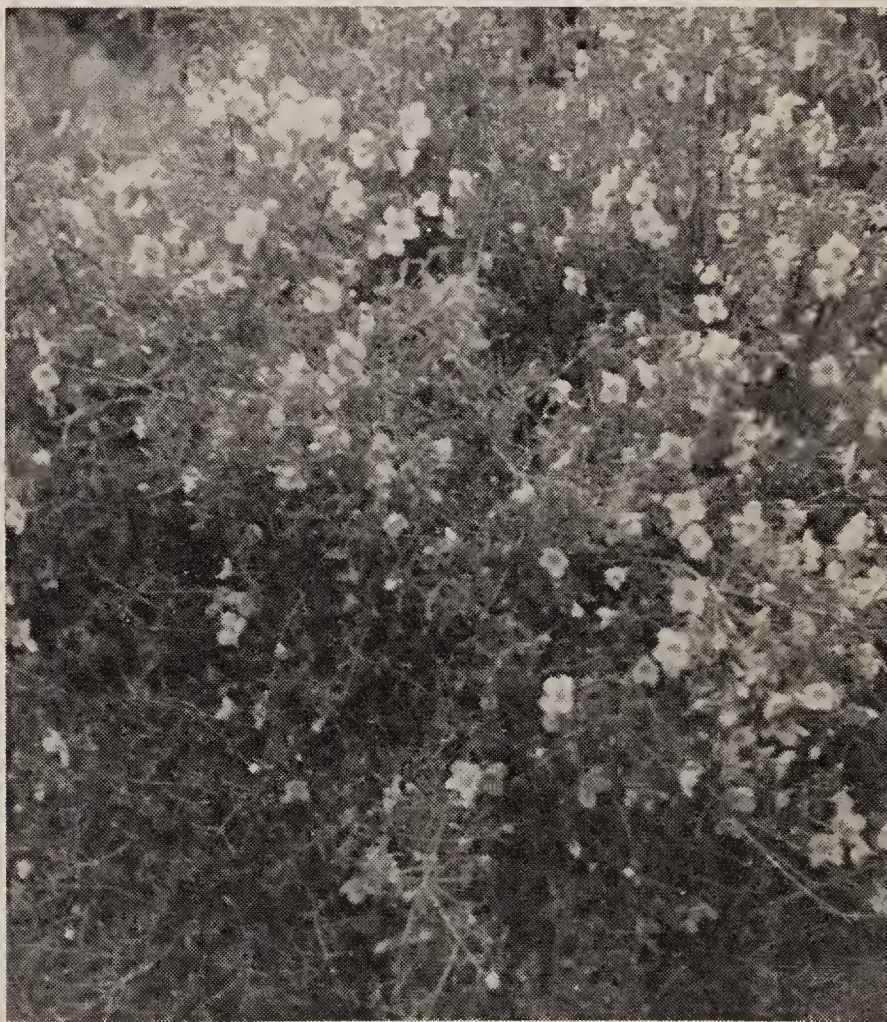
These and many more all require watering until well established, probably through their first season. Afterwards they will appreciate a few drinks in spring and they will be quite happy with natural rainfall except in years of extreme drouth. They all appreciate well-drained soil but most of them live happily in clay soil if given a foot or so of coarse gravel under their roots.

Where to get these? Nurseries may stock them if they have repeated requests for them. Or they may be dug—sparingly—in the wild but it is difficult to dig their complete roots and more difficult to find young plants. Best of all is to grow them from seed, thus there may be a few extras to give to friends and so increase the number of gardens happy though dry.

Above are just a few from an interesting list of possibilities.

For lawns with reduced water. Keep an inquiring eye for some of the new lawns of Merion blue grass. Before long seed of this may be more readily obtainable. It is making a good record in Colorado.

With our garden of trees, shrubs and lawn going we may begin to think of flowers for gaiety. That is another story.



Fallugia paradoxa, Apache Plume,
in seed and flower.

NATURE'S WINGED BEAUTIES

MRS. H. J. WAGNER

Migration Observer for Fish and Wildlife, Biological Survey, Dept. of Interior

THIS is the time of year when many of our feathered friends are leaving us to spend the winter in a warmer climate, but new recruits are daily coming down from the northland to spend their winter with us. A few of our more hardy ones whom Nature has endowed with climatic readjustments remain with us throughout the year. There are about 13,000 species in the world; 800 species and 400 subspecies in North America. Colorado has 403 and ranks fifth of the states; 276 in El Paso Co.

The first bird of which we have any record was the *ARCHEOPTERIX*. It was in existence in the Jurassic Period along with insects and reptiles. Fossils of it were found in sandstone, shale and limestone. These fossils were dug up in 1861 in a slate quarry in Solenhofen, Bavaria in rock which geologists claim is about 165,000,000 years old.

Birds are creatures of instinct; their whole life pattern is determined in advance. They have no power of thought. The young bird inherits every step in its life cycle,—migration, nest building, etc. They have been the inspiration of much that is beautiful in art, poetry and song.

Our summer residents are perhaps the ones we are more familiar with because we are out in our yards and gardens more at that time. Our winter residents are more shy and not as common. They carry no evil thoughts toward anyone and sing just as merrily before the lowly as the rich.

Insects prey upon every kind of vegetation that is produced by man. We have to fight them because nature's balance has been upset by man.

Every year insects cause a loss of more than \$2,000,000,000 to farmers, fruit growers and gardeners. All known means except one has been used to exterminate the insect pests. And that is,—to increase our bird population, the natural enemies of all insect pests. A French scientist estimates that if one plant louse were left undisturbed for one year it would produce 5,904,900,000 offspring. We think of a bird as being "beneficial" if it eats insects and bad if it eats fruit or grain. But, do you realize that human beings need certain insects. There would be few fruits without the insects to carry the pollen. We have to have insects to help control insects. There are insect parasites and predators of other insects. We couldn't live without insects and we couldn't live without birds. We need both for the balance of nature.

Sometimes when the birds' accustomed supply of food is short, they are driven to cultivated crops. They may be beneficial in one locality and harmful in another. If a robin eats a few cherries, he is only collecting back pay for the good he did early in the season. Man has introduced so many new elements into Nature, on a vast scale, and Nature's method of development being slow has not yet caught up with changing conditions.

Many people seem to think that they must spend dollars upon dollars for devices to attract birds. But home made attractions are far more appropriate. The number of birds found within the cities is surprising. They will sooner or later find your feeding stations. Besides food and water they must also have plenty of cover,

—shrubby, vines, small trees, evergreens. Tall trees are used only by but very few. The more birds we have on our grounds the fewer insects we will have to fight. As a rule we should not feed our summer birds—except in time of severe drought and food shortage. They should forage for themselves, gathering their natural food and encourage them to hunt insects in our gardens. We must treat a bird as a friend and not as a scientific specimen.

Each class of birds has a distinct duty to perform. The swallows and flycatchers sweep the air of mosquitoes and gnats. The warblers and wrens keep the foliage cleaned of insect eggs and caterpillars. The chickadees and woodpeckers clean the bark of insects. The robins and sparrows are the caretakers of the ground floor, getting cutworms and other bugs from the soil and grass. The hawks, owls and eagles catch the rodents. The vultures clean the countryside of decaying animals. A garden without birds is still, lifeless and desolate. 5,000 ants are just a tasty snack for a Flicker. A Catbird will eat 30 grasshoppers and be ready for a second helping. 2,000 mosquitoes are a fair day's catch for a Nighthawk.

Without the help of birds Columbus might not have discovered America. At a time when his crew were becoming discouraged and mutiny threatened, land birds came flying about the ship and were travelling in a southwesterly direction. He changed his course and followed them about 215 miles and sighted land.

There are few, if any, places where one finds no birds. Many of them pass by unnoticed because we are not "awake", or have not cultivated a "bird habit". How exciting to get up on a frosty morn and find our shrubbery filled with birds that have stop-



ped for food and rest on their journey to the southlands. How they do chatter among themselves, having no fear and putting their trust in humanity. How we wish we knew what they were saying. They migrate with no calendar to guide them; yet they leave their northern breeding grounds about the same time each year; they cross the seas without a compass; they speed through the pathless dark nights alone, or in flocks.

The finest eyes in all the world are those of birds. Many have sight 100 times as sharp as man. One group hunts while another sleeps. Some work by day, some by night; we are never left unprotected. Learn to recognize them by sight and sound and they will give you many pleasant hours. You may finish up your work with the rhythm of the seasons:—the sowing time, blossoming time, harvest time and rest; but birds' work is never done.

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APOLOGY IN A GARDEN

By LUCILE A. THURBER

ON a bright autumnal morning one saunters about the garden, noting the many ravages of drought, insects and encroaching weeds. Seeing Johnson grass high again, grasshopper holes in glossy rose foliage, he makes the profound decision "Now, I must take my garden in hand AT ONCE," only to discover a bit later (there is always a perceptible hiatus between resolve and flashing steel of deed in a wavering soul like mine) that the garden has taken YOU in hand. Suddenly, some dazzling blue and gold morning, monarda has thrown out new shoots where dead blossoms were so conscientiously cut off, and already a ragged crown has come again to which pulsating humming birds wings have set countless bronze halos. And heralding that fleeting precious moment of last bloom, butterflies' unhurried rhythms again provide the illusion of full summer. Every heavy cluster of Michaelmas Daisies harbors its striped bee—tireless optimist. Suddenly one comes upon some fugitive miracle of gold or blue or crimson, whose origin has been forgotten, and which now adds benison to this autumnal glory of which chrysanthemum, attended by goldenrod and daisy, is queen.

Getting the garden ready for winter has its rich rewards as well as back-breaking labor and snagged nylons. As you break off dried phlox and delphinium stalks, step carefully for these are the tender green whorls of the sprouting madonna lily bulbs you planted last month, all twelve of them, with their stately promise for June to come. Now take the small sack of coral lily bulbs from your pocket and set groups of sharp, decisive accents here and there, marking

their location plainly as you go, to avoid spring heart break, for they come up so delicately that it is difficult not to cut off their fragile fern-like shoots when weeding.

As one works, one need not be too distressed by the sight of misplaced groupings or ugly bareness; for thanks to the blessed "Vision Fugitive" of the gardener with second sight one can always see the garden completed—nearer to the heart's desire. Just as in the artists pictorial composition, behold the important function of empty spaces in the overall design of the garden. This is a thing mine eyes shall never see, alack, as the vagaries of greedy nature drive me relentlessly to ever crowd two things where one would and should better thrive.

The garden is perhaps the only pursuit that may be "all things to all men." The dreamer can always identify there the stuff his dreams are made of. He to whom factual aspects are more congenial, can pursue with satisfaction the absorbing intricacies of soil chemistry and plant feeding. For the musician what more absorbing than the shimmering rhythms of butterfly, grasshopper and ever present tiny insects? He hears the soporific sustained hum of bees, staccato leaping of grasshoppers, the floating andante of king butterflies, whirring adagios of swift hummingbirds' wings, and always the allegro accompaniment of birds. For the artist there is an endlessly rich palette spread for use, and the art minded planter need only plant with his ultimate design in mind to realize a brilliant series of masterpieces in the style of his choosing. Does his spirit harmonize with classic still life, the rose corner offers ma-

terial no less mellow and adaptable than a Fantin Latours. If he longs to possess an authentic Cezanne or a priceless Van Gogh, the materials are at his elbow. Does he wish to produce a modernistic canvas of striking design and color, how about the intricate angular patterns of that clump of iris beneath the wild plum tree?

If he responds best to sensuous stimuli there are the endless provocative scents, sweet and spicy all about him, from the heavy perfume of rose and heliotrope through the nostalgic waftings of clove pinks, the almost imperceptible fragrance of columbine, the fresh sweetness of primrose telling of shaded meadows on warm English afternoons, the heady romance of violets—all offset and titillated by sudden acrid accents, and underneath always the pungent scent of good fertile earth. And what lovelier than the pervasive perfume of green-green leaves lush in the sunlight?

The therapeutic value of the garden should be definitely stressed. When you are impatient with yourself for becoming too deeply and exclusively involved in "doing good" projects, observe the lily at your elbow. It toils not and the good it does is entirely the unselfconscious service to bee and butterfly and human spirit—a natural outpouring of spiritual richness—surely ideally the higher good. The only toil involved is that small richly rewarding effort you made one morning digging its shallow bed in warm fragrant friable earth, while you studied the subtle color and grandly simple structure of its bulb. If that be not enough to assuage your sensitive conscience, reflect that after all you are an effective civic worker, for does not the entire neighborhood enjoy your garden? Remember that weary cleaning woman who told you only yesterday that she walks three

extra blocks on her way home just to see what new thing has bloomed in your garden since last she passed that way; and found it entirely worth the effort. Garden Philosopher, upon this simple theme you can build a grandiose structure of justification for the lotus eating delights of an essentially lazy soul.

Given an impressionable subject, experiences in a garden are apt to run the entire gamut of emotions, through intellectual concepts to philosophy. An afternoon in a garden can conduct one from factual conceptions, through reminiscences, before and beyond ones actual experience, into the dream world, and out again onto the breezy plateau of entirely tenable and illuminating philosophy.

That moss rose straggling against the fence brings me grandmother's garden in the country, a bank of apple blossoms just beyond it, and beyond that the rotting log where foxgloves grow tall in spotted sunlight. Surely it was here that Puck wandered seeking Titania. Those forget-me-nots so blue in the shade, little grandmother herself dainty in sprigged muslin, bending solicitously over coral bells before she moves gracefully back into that vanished world of unhurried serenity where there was reasonable certainty of gracious living to be anticipated.

Kneeling among the perennials there is that precious, breathless moment when humming birds, not one but three, are suspended on whirring wings as they drink nectar with their long almost invisible bills flashing deep into the rosy whorls of monarda. Do not move, scarcely breathe, and they will come near enough to brush your cheek. That neutral toned small butterfly avoids the strong spotted orange of the tiger lilies to hover among sweet williams.

The earth itself is fragrant as it is turned over, damp and potential under exploring trowel. But alas, more care is needed, for my brother the worm is mortal. Or did someone say that if cut in two there were then simply two worms to cultivate and aerate the soil? No, that philosophy for murderers is not tenable, honesty forbids it. "Honesty" with its silver dollars unfading amidst fragile growth. It transports me back again to grandmother—into her parlor this time, where a vase of it sits all winter atop the organ, silver in the fading

winter twilight—a lovely spontaneous bouquet unworried by rules for "arrangements."

But now it is high time to quench these dream vagaries and bring out those delightfully bulging sacks of tulip bulbs, carefully designing the tapestry of spring bloom as you plant, washing rose against purple, flooding white among yellows and amber golds and reds. An accent of black here and there, and the stained glass window for the chapel below the lilac hedge is potentially finished.

CREATE PICTURES IN YOUR GARDEN!

By ROSE MANSFIELD PIKE

RIGHT now is a good time to take stock of your garden and make plans to improve it next year. Take a chair out where you can get a good view of it and sit down to just see what you can see.

There are endless combinations of colors, heights, textures, forms, and habits which can be used to create striking effects with no great outlay of money or time.

We are all familiar with the delphinium-and-white-lily combination. The candidum lily has the same blooming time as the delphinium, but add to this combination a foreground of white dwarf sweet alyssum to keep the roots of the lilies cool, and you really have something.

As a backdrop for the lovely old-fashioned blue iris plant them in front of the flaming orange Oriental poppies. They have the same blooming time and are effective if intermassed.

Look over the available space you have, and see what will grow in the shaded areas. A lovely combination for early spring before the trees leaf out is a bed of Myrtle with its beautiful blue flowers and Pink Hyacin-

thins rising from its depths. They are both through blooming before the shade of the trees envelops them. Or plant a succession of the tall-growing bulbs, Daffodils and Tulips, among the Myrtle so the early ones will start the riot of color, the later ones bringing up the rear. And of course the value of the myrtle also lies in hiding the withering foliage as it melts back into the earth.

One plant of which not enough use is made in the garden picture is the lovely Tuberous Begonia. Grown in pots, they are almost eternal, lasting year after year by retiring to the cool basement before frost and starting them to life again in April. Placed before tall perennials on the morning side, so they have the afternoon shade, they can be placed anywhere in the garden for striking effects, if the sun is not too direct. Ferns and begonias create a living harmony.

One striking picture which is not too well developed is the patriotic one. A red, white and blue combination can be worked out with tall red Maltese Cross (*Lychnis chalcedonica*) as the background, Shasta daisies in

front, and one of the low-growing blue-flowered border plants to complete the ensemble. These are all long-flowering and will last for a good part of the summer. They could be planted at the center of a long strip against a wall or fence, with other colors and seasons ranging away to the right and left.

A good use of color can be made by using a sloping hillside or back yard, starting with a deep hue of say, purple, at the base, shading out to the lighter tones as the elevation rises. An occasional splash of contrasting or harmonizing color is desirable, and if there is a green hedge to top the rise, the effect is all the better.

Many pictures can be created with the bright colored annuals. Choose a central color that will be long-lasting, then build around it. Sometimes a low-growing plant near the back dooryard can be made the beginning of a line which rises in increasing heights and curving lines to a focal point at the back of the garden, terminating at some place of special interest. This is a good way to lend privacy to the barbecue pit or screen the garbage cans.

When you have studied your garden thoroughly, make a design to which you can add as time goes on, and see what fun you can have in creating pictures with flowers.



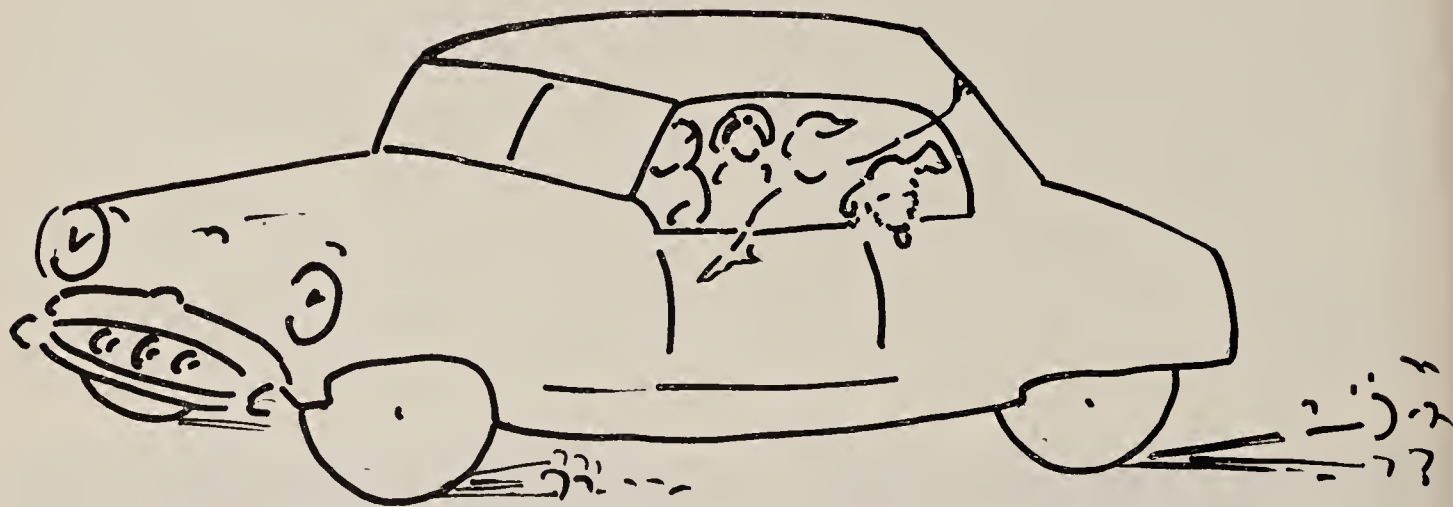
LET'S GO ON A PICNIC

HAZEL N. ABBOT

HHEY, Mom--, let's go on a picnic! It is a beautiful day, a Colorado day. The sun is shining, the sky is clear and the mountains look close enough to touch. There isn't a cloud

family scatters, each in pursuit of his own interests.

Junior gets busy looking for firewood, tearing branches off living trees, green wood that will never



to be seen.

Father is not at the office as it is Saturday and soon the whole house is hustle and bustle in preparation for a day in the mountains.

Mother quickly sizes up the contents of the ice-box and Junior is sent to the store for hot-dogs, beer, cokes and candy bars. Before long everyone climbs into the family car and they head for the mountains.

After some time and much argument a spot is chosen, — a lovely green-sward beside a mountain stream, hemmed in by spruce, fir and aspen.

Every one tumbles out and the

burn, leaving an open sore ready to catch any infection that may eventually kill the tree. Poor Junior, no one has ever told him not to tear branches off living trees and he is not a scout so he does not know the technique of camping.

Father is gathering dead, dry wood which will make a good fire and soon the sound of sizzling meat is heard in the land.

In the meantime little sister has wandered off to pick flowers,—such lovely columbines, lots of them, growing in the aspen grove. Sister picks nearly all of them, pulling them up by the roots and then she goes back to the family, putting the flowers down to wilt and die or to be trampled on. No chance for these flowers to seed and keep the columbine fam-





KLEENEXUS VIBURNUMOIDES.

native habitat picnic grounds.

ily going year after year, and so another columbine patch comes to an end.

Lunch is ready and everyone gets to work and has a wonderful time. It is so easy out in woods! Egg shells can just be thrown in the bushes, beer cans follow them. Coke bottles are more fun as they can be smashed and they make such a wonderful crash. It does not matter that the glass may cut other picnickers who come later. Some bottles are saved to float down the stream, ending up before long on the stream bottom a horrible eye-sore, or stuck along the bank to show that picnickers have been here.

When it is time to go home all useless stuff such as paper plates, cups, napkins, cartons, all can just be left behind. No need to do any house-keeping here—never mind if it de-

files the beauty of the spot and spoils it for the next people who come along looking for the perfect picnic spot.

Someone has hay-fever and a new and ever increasing plant is soon seen on the spot—the Kleenex bush. It will be so nice for the next people to find it.

Little sister just must have some fresh flowers and other varieties are plucked, only to wither before home and a jar of water can be reached and so the flowers are thrown out the window.

So the little family departs for home, happy and light-hearted, leaving a complete mess of tin cans, papers, orange peels, and broken glass, ready for the next comers.

Some people do not even put out their fires, and so a forest fire is started; but we know better than that in Colorado,—we hope!

THE TRIALS OF AN AMATEUR BOTANIST

By JOHN HARTWELL, M.D.

WHEN I came to Colorado Springs thirty odd years ago I had nothing but time to spend and the scenery was so different from that to which I was accustomed that I used my time riding around. I busied up Pikes Peak the fourth day I was here. I noted the views and I noted the rocks but I didn't see any flowers. That was not because they were not there, for it was the middle of August.

When my car came, everywhere I went I did see a big white flower with blue-green prickly foliage, and in spite of wounds I brought it home for identification. No one could give me a name for it, but it was suggested that there were two ways to get a flower named; ask someone who knows, or learn to do it yourself. Since the latter method seemed to be more practical I thought I'd try it. So I got a Clements and Clements, "ROCKY MOUNTAIN FLOWERS." I didn't understand the nomenclature but it had a glossary, the pages of which quickly became soiled by use, and there were helpful pictures. But Oh! those Latin names—or were they Greek? Many were jawbreakers or tongue-twisters. None the less I was told that each plant had only one scientific name, and if you learned that, any one who knew anything about plants anywhere in the world would recognize the plant by that name. "Don't learn common names" they said, and the truth of that was demonstrated at an early flower show where I overheard a man and a woman almost angrily arguing because what one labeled "Nigger-toe" was not the same plant the other

knew by that name. That determined me to learn scientific names, whether I would put the accent on the right syllable or not.

Shortly after the flower show I was talking to a real gardener about shrubs that I would like to put in my garden and that would not require too much care. I asked about *Jamesia americana*, and he declared he didn't know what I was talking about. After I tried to describe the bush I had in mind, he laughed and said "You mean *Edwinia americana*!" So there was more than one scientific name for a plant! Which was right? Was it fifty cents, or half a dollar?

It was easy to learn to recognize the members of the mustard and the pea families, and I thought I was making progress (perhaps I was), but when I brought the first ones in for identification I found that the starting point was the fruits—the siliques in one, the pods in the other. So I had plants staked out all over the plains waiting for fruits to form. But why not call them both fruits?

One spring day I was driving to Denver, and near Palmer Lake I spotted a blue flower. With little difficulty I found it was a *delphinium*. Which? The first choice in the key was between "Roots Bulbous" and "Roots Fibrous". I had no roots. The slogan "Don't destroy the wild flowers" had made a deep impression on me and I wanted to comply. How could I find out what the roots looked like and still preserve the plant. I'm still wondering.

To clear up unanswered questions in my mind I took a course in Systematic Botany under an extraordi-

narly patient and inspiring teacher who has since become a very dear friend. Ask Professor C. William T. Penland whether one man's gain is not another man's loss. Anyhow I learned that the very first published name of a plant was the correct name if published later than 1754 when Linnaeus published the SPECIES PLANTARUM, and no matter how many names were given a plant by how many persons the original name stuck. I learned that the letters after a plant name referred to the christener. What about the letters in parentheses? Here's another X. The fellow in parenthesis gave the plant a generic and specific name but someone else thinks it belongs in a genus other than that published so he changes the generic name but retains the original specific name and adds his initials. And more than that: genera and species are mental concepts. If the plant has the fuzz of a youth's chin it belongs to one genus, but if the hairs resemble those of an unshaven man, long and thick, it belongs to another. So I learned about "Splitters". I learned to recognize Halerpestes and Batrachium and Ranunculus. Very recently I have been reviewing my Ranunculi according to Lyman Benson's monograph. He puts them and Cyrtorynchia all under the head of Ranunculus. So I have learned also about "Lumpers". What's the amateur going to do?

You need rubber boots and a bulldozer to collect the sedges in the swamps. Then you need a dishwasher or some other cleansing apparatus to get rid of the muck on the roots and a dry cleaner to make the clothes you wore presentable again. Finally you find the perigynia are not ripe or that the plant is dioecious and you have the staminate plant and the keys are based on mature perigynia

on pistillate specimens if the plant is dioecious. There's no justice! You got the damn sedge on the Western Slope and you live on the Eastern Slope.

In addition to the sedges there are the willows, some of them the first flowers to bloom in the spring, and the "pussies" are so pretty. Again the willows are dioecious, and with no leaves how are you going to be sure that the pistillate and staminate catkins you put together really belong to the same species? More, some of the experts say you must not only have the catkins but the mature leaves as well to positively identify your willows. And I have heard it said that several twigs with leaves from different parts of the same shrub were submitted to a willow specialist who identified them as three different species.

The amateur's trials are great and discouraging but one way or another they can be overcome. Experience is a hard teacher but a good one.

Mrs. Beverly Finch

The Colorado Forestry and Horticulture Association lost a staunch friend with the passing of Beverly Finch on September 19th. Until illness prevented, Mrs. Finch spent many hours at Horticulture House, helping the staff in many ways. One of her articles, "A Dream Come True," in the December, 1948 Green Thumb, is illustrated with one of her charming flower pictures.

Mrs. Finch was a longtime employee of the State Land Board, and a resident of Colorado since the age of 14. A daughter, Mrs. Margaret Vail of Denver, is a member of this association.

KATHRYN KALMBACH.

MULTIPLE USE OF THE GARDEN PLOT

By ROSE MANSFIELD PIKE

NOT enough has been said concerning the idea of more than one use for a plot of ground. We shy away from the extensive use of bulbs because of the unsightly barrenness of the ground after the blooming season is over, not to mention its delapidated appearance while the bulbs' foliage is ripening off. There are so many worthwhile flowers of the garden that have different root-levels which do not interfere with each other during their growing season, that it is interesting to make a study of them and try working out a program of continuous bloom for the season.

One bed in my garden when I acquired the present home, was given over to moss roses. Their delicate foliage was subject to rust, which cut down on their vitality and reduced the quantity and quality of blooms. Among them were a few buttercups which added a bright note of gold to the general color of the garden. After they finished blooming, there was nothing more to be expected from that bed.

I began experimenting with soils, different plants for a longer season of bloom from one spot in the garden, the effect of fertilizers on color and insect pests, and have had a most rewarding experience.

I found that the moss roses were not as deep-rooted as the hybrid teas, and by training could be made to bear their crop of bloom above the level needed by other things. They now grow as tree roses, out of the way of the lower-growing roses which follow so soon. From this bed I now harvest six successive crops of bloom, ending the season with the brilliant

red berries of the common garden asparagus which has voluntarily ranged itself as a border plant.

The first crop is the *Vinca minor*, also as a border plant, which sends its roots down to about the four-inch level. While it is still bright with its lovely blue flowers, the tulips come along with the wonderful gold color that only the *Zina* can produce. These come up from the ten-inch level underground, where they do not interfere with the roots of the tea roses which are at the eight-inch level. The tulips are interspersed among the roses, and pass out of the picture as the buttercups, coming up from the three-inch level, overlap the succession of bloom in time to hide the yellowing foliage of the tulips as it melts back into the earth. By the time the blooming season for the buttercups is over, they need shearing back to use as a ground cover for the next round. The tree roses in the meantime have been growing from the six or seven-inch level underground, and their blooms are produced at the three-foot level above ground, out of the way for the hybrid teas which come along from eighteen inches to more than two feet high.

Another little ground-hugger which needs drastic control creeps under everything with its roots in the one-inch level underground. It is the *Kenilworth Ivy*, whose tiny blue flowers cannot be said to be a crop, but are a delight to a garden-minded individual. In the middle or later part of the summer the *Tiger lilies* swing into the picture with their glowing blossoms high above everything in the middle of the bed. Their



A glimpse in the garden of Mrs. Pike.

roots are down so deep that I have never been able to find a single bulb. That late fall round of bloom from the roses ends the picture for the season, with a farewell from the red berries of the asparagus.

The soil in this bed is a deep, rich loam. I have mulched during the fall and winter with compost, letting the leaves lie which drift in. In the spring I mulch again with leafmold. Since using the leafmold the colors are intensified, and insect pests are no more. My theory is that the acid contained in the mold is absorbed by the plants and pests leave them alone.

During the summer I give an occasional feed of commercial fertilizer, to keep up the fertility of the soil. On account of the ground covers, it is not so good to use the leafmold then. Once a week is often enough to water, and a good soaking carries things along fine. The humus in the soil, together with the groundcovers, does away with excessive water bills. The bed is always lovely to look at, and the constant succession of bloom keeps one wondering if there is room to add one more level either above or below, and harvest one more delight from the garden.



Raymond W. Lewis co-owner of the 50,000 acre Banning-Lewis Ranches, El Paso County, Colorado, points out to Dr. H. H. Bennett a panorama of range conservation work carried out by the Soil Conservation Service and the Central Colorado Soil Conservation District. Range terraces in the foreground have greatly increased growth of native grasses as a result of moisture conservation. Reservoir holds flood waters diverted from a broad wash which formerly caused considerable damage to land below. Water is used to irrigate grassland. August 15, 1950. SCS Photo by D. Harper Simms.

PROGRESS IN SOIL CONSERVATION

By HUGH HAMMOND BENNETT

I WAS asked to prepare for The Green Thumb some impressions with respect to the progress that has been made in Soil Conservation in the Central Colorado Soil Conservation District.

I derived great pleasure about three years ago from a visit to the Banning-Lewis Ranches on the rolling prairie about ten miles east of Colorado Springs, Colorado, where every type

of Soil Conservation has been practiced for more than twenty-five years. During the forenoon we had reviewed at first hand the many items of work that make up this magnificent composite of land rejuvenation through modern Soil Conservation and sound land use. Finally we went to the summit of Jimmy Camp Bluff. This spectacular outcropping of pink and white sandstone is approached on a

gradual slope from the north. At the summit the rock cuts sharply straight down hundreds of feet to the prairie floor.

Jimmy Camp Bluff is almost in the center of a 7,000 acre pasture which had been drastically overgrazed in the days of trail drives of cattle from Texas and even on through the second decade of this century. Then came the great drouth.

As soon as this land was acquired by the Banning-Lewis Ranches they began Soil Conservation work. The United States Soil Conservation District went into action. On my first visit to this land the view from the Jimmy Camp Bluff was a cheerless spectacle of wasting land and what seemed a costly disregard of water control. There was great loss of needed water by failure to do anything effective toward saving and utilizing the runoff. In numerous places the scars and ill effects of overuse—abusive use—of the land was

evidenced in frequent gullies; poor, soil-stripped, eroded areas; and thinly vegetated grazing lands.

Our Colorado Springs Soil Conservation and Water Conservation project was getting under way at that time. Some good work was being carried out, but there was so much to do that I had the feeling that perhaps we had started too late to save many of the damaged areas. This lack of optimism about the land situation was accompanied by the further feeling that here, as in countless other places throughout the nation, our agricultural leadership had either bogged down or never had understood the seriousness of the erosion problem. At any rate essentially nothing had been done either here or elsewhere to halt the wastage. Nationwide, erosion was our number one agricultural problem and the world's outstanding example of rapid damage to crop and pasture land left to the caprice of the winds and rains. We

Water caught in contour ditches and holding dams. Banning-Lewis Ranches.





Cattle are happy at the Banning-Lewis Ranches with plenty of grass and water.

sat by in complacent ignorance, doing little or nothing, either in the field of research or action on the land.

As evidence of this, a nationwide survey of erosion made in 1935 revealed that some 275,000,000 acres of farmland had been seriously damaged or ruined for further immediate cultivation. For decades the only opposition to the wastage was a few scattered bulletins about the erosion problem, together with an occasional ineffectual "demonstration" of how to control erosion with simple field terracing.

When we started our national program of modern Soil Conservation late in 1933, I was unable to point to a single farm in the country which had been effectively treated in its en-

tirety with the permanent type of Soil Conservation measures except where the land had been put into grass or planted to trees.

I dislike restating this gloomy aspect of the land picture as it was twenty years ago, but apparently it needs to be retold. Soil Conservation appears to me to have run into rather too much friendly reforming at the hands of the inexperienced—the reformers. This danger began, as I have seen it, with the issuance of Department of Agriculture's Memorandum 1278 shortly before the last national election. Part of the Memorandum was recently voided but not enough of it, in my opinion.

On my recent visit, three years ago to the Banning-Lewis Ranches, I was

pleased to see how twenty years of consistent Soil and Water Conservation had transformed the entire area. A view from Jimmy Camp Bluff commanded the wide expanse of highly successful Soil Conservation work. Thousands of acres of contour terracing; holding dams to control runoff; water spreaders leading from these dams to distribute the water over the great prairie floor. Everywhere grasses had come back into the depleted land. It was indeed gratifying to a conservationist.

I am strongly in favor of doing much more of the stimulating kind of conservation work I saw from Jimmy Camp Bluff. I want to see more water conservation by water-spreading dykes and more control of floodflows along headwater streams where floods originate. And we need more stockwater ponds and improved management of grazing lands, more seeding

with the better grasses and more sound use of the land—use that accords closer with the producing capability of the land.

This and many other kinds of Soil and Water Conservation work has been going on all over the country since the beginning of the national program in 1933. Erosion has been controlled on millions of acres, and per-acre yields largely increased where the control work has been carried out and maintained. Such better unit-production means increased profitability in agriculture, as in other enterprises.

Although the work began as an action program only twenty years ago, the job is now about one-third completed. This to me has been miraculous progress—the greatest ever made by any country. When we started the work I never dreamed of living long enough to see so much accom-

After a flood the water is caught and used to grow a heavy pasture of brome grass below the dam as well as make the ducks happy.



TEX-23170



Dr. H. H. Bennett, Marion S. Weaver, District Conservationist, and W. S. Caton, farm planner, examining a healed gully, the result of good range conservation on the Banning-Lewis Ranches, Central Colo. SCD, El Paso County, Colo. SCS Photo by D. H. Simms.

plished.

Some of the facts involved with this work are interesting:

Nothing of any important consequence had been accomplished in the way of permanent Soil Conservation when the action program got under way on the 19th of September, 1933, under the Soil Erosion Service.

The cost has been less than is commonly understood—because of the increased yields which have invariably resulted from the work. The part of the program carried out by the Government, consisting chiefly of technical assistance supplied to the farmer—directed soil conservation districts by the Soil Conservation Service—has returned a handsome monetary profit to the Federal Treasury.

The work has achieved land stability to considerably more than 150,000,000 acres, and has been completed, started, or requested by a million and a half farmers and ranchers throughout the length and breadth of the nation.

For many years the work was moving forward at a progressively increasing pace, and requests for additional conservation farm planning by Soil Conservation Service technicians were coming into the district supervisors faster than the limited technical force could process them.

With an increased force of technicians—up to something less than twice as many as are presently in the Soil Conservation Service staff—the job for the entire country could be

completed, up to the stage of maintenance, in approximately twenty years. This would result in a saving in land protected, increased per-acre yields, and other advantages that would exceed the cost, according to careful estimation.

Soil Conservation Service is the only Federal agency which has looked ahead to a finishing-up point—so far as I have been able to learn.

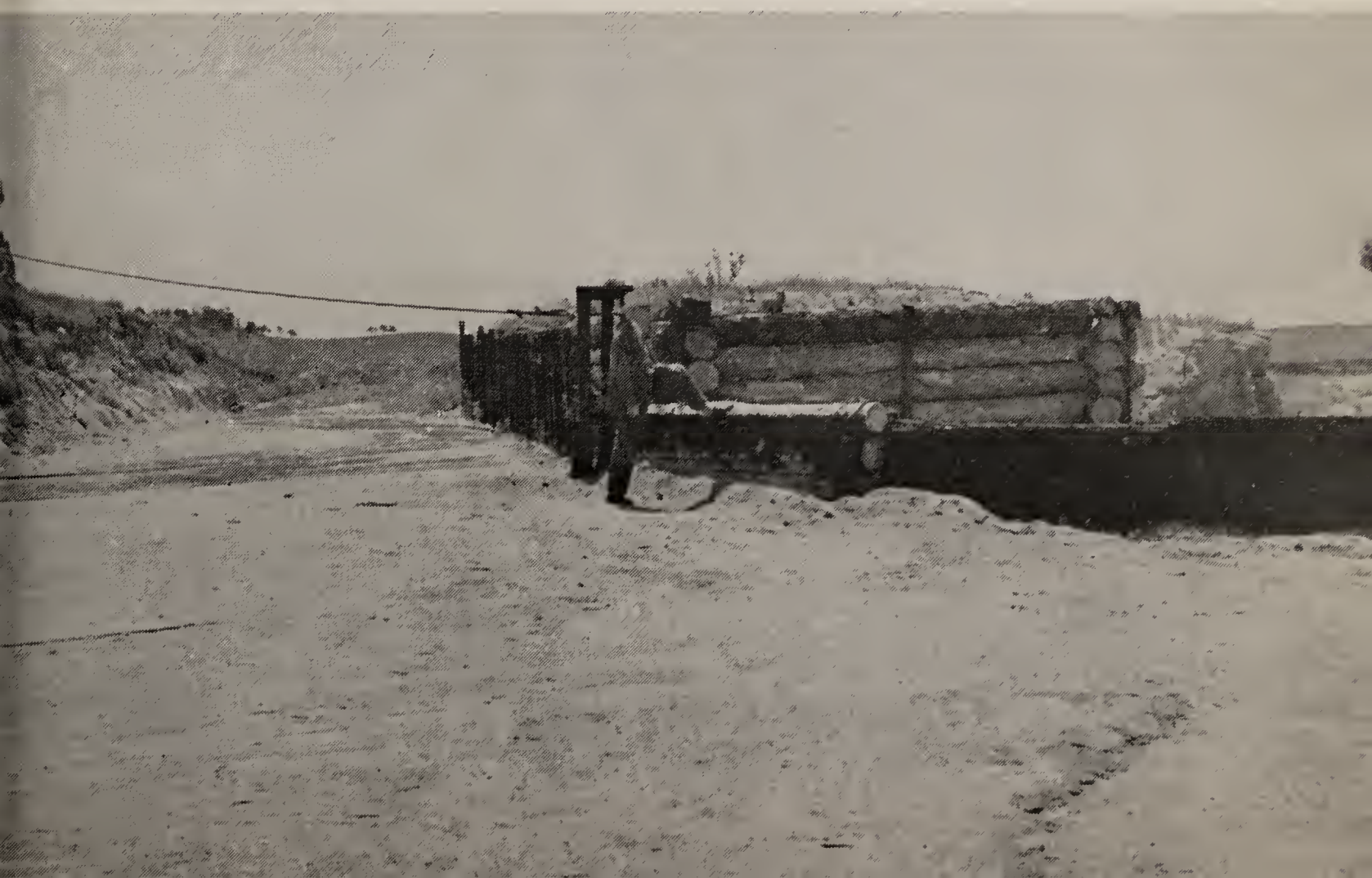
The program of Soil Conservation Service is the first of the kind in history and the only kind, that has a chance of proving successful. The work is based on the treatment of land according to kind and need, through the use of all measures required to effect permanent control of erosion, one measure supporting another or several others wherever needed. Various fields of science have necessarily been utilized to carry out the program, such as Soil and Water Conservation, land science, hydrology, agronomy, forestry, biol-

ogy, chemistry, geology and climatology. Take away so much as one of these tools from the whole tool of coordinated techniques and the program will be weakened, not strengthened—and our national defense undermined accordingly.

It is time for the public to take notice and speak out about our public program of proven value, otherwise bureaucracy, give-away programs that get little done for their huge expenditures and indoors, theories and philosophies will be substituted for solid work that millions of farmers and ranchers operating in the nearly 2,500 Soil Conservation districts, including about 90 percent of the farmers of the nation, have requested.

Everybody has a stake in the welfare of the land. It is still the principal source of our food; as yet synthetic food or any evidence of it is not in sight. My advice is to get acquainted with the supervisors of your

Flood diversion structure built across Jimmy Camp Creek on the Banning-Lewis Ranches in Central Colorado S.C.D. Water which formerly damaged fields downstream now is diverted into a reservoir for range land irrigation. Rattlesnake Butte, in background, was location from which photo No. 1 was taken. SCS Photo by D. H. Simms.



Soil Conservation districts and get the facts.

What is dangerous to a nation is the refusal of people to take the trouble to look carefully into what is being done with their resources. In mid-August our population passed a 160,000,000, and the rate of growth was better than 2,000,000 a year, with medical science advancing as never before, promising still more people to feed and clothe.

On the other side of our farmland balance sheet land is still being taken out of agricultural use by erosion at the rate of around 500,000 acres annually and by use of probably as much or more for the construction of new roads, buildings, airfields, etc. The erosion can be taken care of, and much can be done in numerous instances to put buildings and other structures on the poorer lands instead of the best.

In my opinion, based on Soil Conservation experience, we have enough land if we take care of it without delay, to care for our population not only beyond the fateful year of 1975, when so many fear we shall not have enough land to feed the people of the country, but considerably beyond the close of the century. We can do this, however, only by prompt and continued action. Balancing the budget is important of course, but undertaking to do so, with savings made at the cost of our limited and still decreasing supply of productive land could prove disastrous.

So we must persistently safeguard and wisely use our basic resources of soil and water in order to maintain the strength of the nation. This technical job cannot be accomplished and maintained without the continuing support of understanding and watchful people. Let me urge you then,—everybody—to do his or her part to

protect the very substance of life—our remaining supply of productive land.

ABOUT THE AUTHOR

Dr. Hugh Hammond Bennett, throughout his fine public service received innumerable awards, tributes and recognition as the outstanding Soil Conservationist of the world. One of the most memorable occasions came in his western trip in 1952 when he was introduced to a Chapter of the Soil Conservation Society of America in Colorado Springs as, "The man who had done more to change the face of the earth than any other human being."

Dr. Bennett, for more than forty years has been the Ambassador of Conservation to all the world. His travels to Africa, South America and other foreign countries have always resulted in conquests for Conservation. Increased food supplies and stability of agriculture in other nations may be traced to his travels.

Being Chief of the United States Soil Conservation Service from its inception in 1933 until 1952 afforded him the greatest opportunity for service to his own country. Today everywhere throughout the United States he is the "All American Conservationist." Dr. Bennett's importance to America will be significant for generations to come. The first complete conservation attack to save American soil and water resources was of his design. Hugh Bennett, as

Opposite Page, Upper: Turkey Foot Grass (Big Blue Stem). This grass evidences good soil practices as it will not grow where pasture is abused. SCS Photo at Jimmy Camp of the Banning-Lewis Ranches. Below: Grass growing heavily in wide holding ditch. Pasture below the ditch renewed 50% in three years.



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he is affectionately called, is still a giant among scientific men dealing with Conservation. His many writings are text material for students and Conservation teachers everywhere.

Hugh Hammond Bennett is at home with all types of people. His purpose in life is to insure the soil and water resources of his nation. Farmers, ranchers, politicians, bankers, professional men, laborers and indeed all people who have come into contact with him, have been inspired to action in Conservation. No man has done more for future American generations, or the presently awakened one.

As President of the Soil Conservation Society of America, as Director in half a hundred commissions and organizations dedicated to Conservation, he is continuing to serve the United States in the preservation and rehabilitation of natural resources. His only compensation for this tremendous undertaking is the respect, admiration and true appreciation given by all who know him. The terraced field, the bountiful soils of the mid-west, the citrus groves of California, Arizona and Florida have all been touched by this American, the greatest Conservationist the world has ever known.

J. SELBY YOUNG,

Director, Colorado Association of Soil Conservation Dists.; Supervisor, Fountain Valley Soil Conservation District; Watershed Representative, Southeastern Colo. Association Soil Conservation District; District Conservationist of Central Colorado, from 1935 to 1949.

Do You Have a Gardener Friend

*or a Relative With a
New Home?*

What nicer thing can you do for them than to introduce them to the

Green Thumb. It is the only garden magazine written for conditions in this Rocky Mountain-Plains area and should save many costly mistakes. It can still be had for \$3.00 a year which no where near covers its actual cost.

NOTICE

November 5, 6, 7

at

The Broadmoor Hotel

National Meeting

Soil Conservation Society
of America

Members of garden clubs interested in Conservation are welcome at all meetings. You are urged to attend meetings at which Dr. Bennett will speak. Programs will be published in the daily press.

How Hal Came to Plant Trillium

By HAL SWANSON

Prologue:

One afternoon in November, 1937 in the back parlor of Cousin Mabel's farmhouse, twenty miles west of Boston, Cousin Marian said that she wished she could grow trillium like Mrs. X. Hal asked about trillium. "She grows them under her sour apple tree."

In the late fall of a year he cannot now remember, Hal bought from Mrs. Marriage, of Upton Gardens, three roots of *Trillium grandiflora* and planted them under the Bechtel Siberian Crab. In time they did well, not in one year or in two but after many years. In time they attracted attention. Many years later he bought

a few more trillium, a small green and white from the northwest and there's a mahogany, but he does not have the yellow from the mountains in the south. Someone said, "Those trillium aren't doing as well as those." Hal said, "Those are new here, give them time, that's what I gave those."

At first he covered them for the winter with the leaves of the crab as they fell but he fished out the leaves from the neighbor's poplar and brought in maple leaves from the parking, as they did not pack, and evergreen boughs which looked pretty for a while and for a long while looked awful. Leafmold was their rich monotonous diet but a few years ago he began feeding them in the late fall very sparingly a special food for azaleas. Whether they needed it or not they were not hurt. Now he does not bother to cover them. The neighbor's poplar has been cut down and this spring they were all right even after the late frosts and the snow that laid the blossoms to the ground. When the snow melted they rose and finished blooming. Foliage is easily damaged by hail which too often comes and there is nothing one, or Hal, can do about that. They should have water during the dry winters and he has always gotten out and watered them in January getting a stiff neck, ankles, knees and wrists from so doing, but this winter he did not. He said come what may he wasn't going to and he didn't and the trillium were as good as any year. Trillium give haven to slugs, but a slug-bait cast when he thinks of it, is a control.

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September and October, 1953

Mrs. William Evans, 1310 Bannock St.,
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rado

Good Outdoor Housekeeping

It is encouraging to note that recently some people have begun to be concerned about the increased carelessness of people in general as to throwing trash out on the streets, highways and picnic sites. Thousands of dollars are spent unnecessarily every year by cities and park maintenance crews to pick up some of this trash that has very unnecessarily been thrown down. In many European countries this is not a problem for the residents have taken it on themselves to avoid this careless dropping of cigarette packages, tissues etc. One reason for the reluctance of the state highway department in encouraging the establishment of the very necessary highways parks is the fact that so much of their time must be diverted to acting as janitors to clean up the trash that careless picnickers and passers-by leave in such places. Every time I see a big sign saying "don't put a cold in your pocket" I want to add, "and DON'T throw it out the car window". We do not have to be so careless and untidy. We can learn to have a definite place in our pocket, handbag or car to put those discarded papers, and regularly empty them in the incinerator.

The Denver Junior Chamber of Commerce, The state Federation of Garden Clubs and other groups are to be commended for initiating programs designed to calling peoples attention to this expensive carelessness, and doing something about teaching the children (and the adults) better outdoor Housekeeping.

DANGER—TRACE ELEMENT DEFICIENCIES

MARY K. HELLER

WE are what we eat—is a saying that everybody has heard at some time, though many may not realize the truth or importance of the statement. Plants also are what they eat, and by the same token, human and animal growth, development and health are dependent upon what plants get for nourishment because they form the basis for all foods, whether consumed as animal or vegetable matter. The chemical nutrients needed in animal and plant life are the same; plant life deficient in any nutrient element will produce that same deficiency when eaten by man or animal. For this reason, a knowledge of the essential elements for balanced plant diet is extremely important. It is just as important for growers of decorative plants to have such information so that they may keep them healthy.

The general public is aware that plant foods have three basic elements: nitrogen, phosphoric acid and potash, but information concerning the so-called "trace" or minor elements is often scant or completely lacking. These minor elements are just as necessary as the basic ones, though in very, very small quantities which must be carefully controlled, since too much of them is as injurious to the plant as too little. Because of the minute amounts required, these are sometimes referred to as "Micronutrients". The balance between the elements is as important as the actual amount of the various ingredients in a plant food. The most important of these trace elements are: boron, calcium, cobalt, copper, iron, magnesium, manganese, sulphur and zinc.

Carbon, oxygen and hydrogen are also essential. These the plants get easily, but the others must be furnished. Plants obtain carbon from the air in the form of carbon dioxide. Oxygen is also obtained from the air and both oxygen and hydrogen are supplied by water.

The purpose of this article is to outline briefly the symptoms of deficiencies of these various trace elements in order to help the amateur grower to recognize them when they occur. No attempt will be made to prescribe treatment, though most of them can be supplied in the sulphate form, the amount required for application varying with the size of the plant and the degree of deficiency. The signs of deficiencies, very striking and definite in most cases are:

BORON: Lack of boron in the feeding medium has very drastic effects on the growth of plants. Since it is not mobile in the plant, evidence of its deficiency shows in the dying of growing tips and the terminal bud. Attendant to this condition is a thickening and brittleness of the upper leaves of the plants. In root crops, such as beets and carrots, lack of boron causes darkened and toughened spots.

CALCIUM: A deficiency of this element is characterized by the stunting of the growth in the entire plant, due to the dying of the feeding roots. This may happen in as short a time as from two to four weeks. The terminal bud also dies. Calcium is sometimes called the "policeman of plants", since it serves as a neutralizer for other salts which might be harmful to the roots. In the plant itself, the func-

tion of calcium is the promotion of the development of new cells which is accomplished by the formation of partition walls down the center of cells to create two new ones. These cells must be formed from a material which is not soluble and calcium is the only element which will do this. Since all growth is the multiplication of cells, it is easy to see how very important calcium is to the list of nutrient elements.

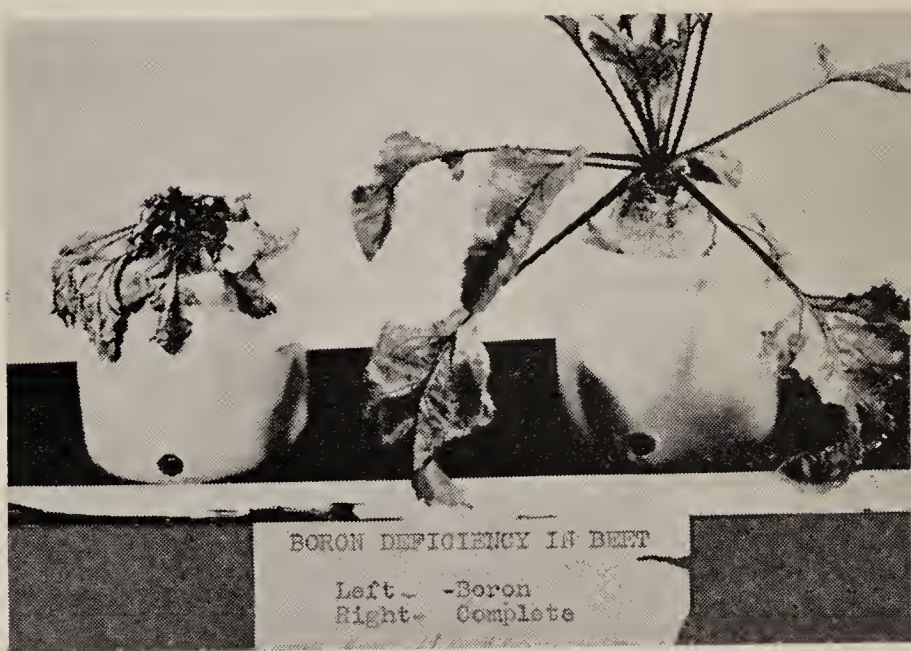
COBALT: Plants or animals needing cobalt present a very "scrawny" appearance and appear to be in poor general health. Cobalt is essential for the development of Vitamin B₁₂ either as part of the substance itself or as a catalyst for it. Whenever this vitamin has been isolated it has been red, as is cobalt, and cobalt has always been present. This fact, in itself, testifies to the importance of this trace mineral.

IRON: The sign of this deficiency is the development of a severe chlorosis between the vein of the leaves. (Veins turn yellow in the case of chrysanthemums) At first, the veins of most plants will remain green, but as the condition increases, the entire leaf develops the yellow color. Iron acts as one of the several factors in the production of chlorophyll, the green coloring matter of plants, and if the deficiency is not corrected by the use of minute amounts of ferrous sulphate, the tip of the stem may die off as well as the younger leaves. A constant supply of iron must be available.

MAGNESIUM: When this element is lacking, the first symptom is a greatly reduced rate of growth, followed by a yellowing between the veins of the lower leaves. It is interesting to note that first signs of some deficiencies occur in the new growth and some in the older parts of the



Zinc deficiency as shown on Golden Delicious apple leaves.



Boron deficiency in beets.



Azalea. Left shoot unsprayed, right shoot sprayed with 2% solution of iron sulphate and Kayso. From Florida Agricultural Experiment Sta.

plant; the explanation of this difference is that some elements are mobile in the plants and some are not. Where the deficiency is one of a mobile element, that element betakes itself to the new growth to protect it, so the lower older leaves show the lack. On the other hand, effects show in the new growth if the needed element is not mobile in the plant. Magnesium is a mobile element, hence the chlorosis of the lower leaves shows first. This chlorosis is actually due to the breaking up of the chlorophyll, since magnesium is one of the prime factors in the manufacture of this coloring matter.

MANGANESE: The type of chlorosis which is the symptom of this deficiency can be distinguished from that of iron deficiency chlorosis in two ways: first, the areas due to lack of manganese are smaller than those caused by iron deficiency and generally appear in the middle of the leaf; secondly, the areas around the chlorotic spots remain green and give the appearance of a mottled or netted leaf. Continued manganese starvation results in stunted growth and the inability of the plant to flower or set seed, as well as the dropping of the leaves. Manganese is necessary for the maintenance of the green coloring of the chlorophyll and without it the plant becomes soft, since it cannot manufacture the sugar needed to keep the plant hard.

COPPER: The dying-back of growing tips, chlorosis due to lack of chlorophyll and an abnormal "rosetting" of the leaves are signals of this deficiency. Though needed in the most minute quantities, copper gives some stimulation to the growth of plants and if it is entirely absent, the plant cannot function normally.

SULPHUR: The need for sulphur

develops a type of chlorosis which is exactly opposite to that caused by other trace element deficiencies, for here the veins are lighter than the rest of the leaf and the top of the plant is first affected. The entire plant may appear to be somewhat stunted in growth. Sulphur apparently aids in the development of new cells in the growing process and in the building of starches and sugars in the plant. It is an integral part of the protoplasm of the cells.

ZINC: Deficiency of this element, though it is required in very small quantities, causes a condition some-



This pig's curled foot is the result of calcium deficiency.



Cow has failed to get a trace of cobalt.



Hen with slipped tendon due to lack of magnesium. Her eggs will hatch poorly. Pictures courtesy National Fertilizer Assn.

times called "little leaf disease". Leaves form, but are unnaturally small and often curled. Fruit trees and some vegetables, especially corn, show chlorosis when lacking zinc. A very dilute spray of zinc sulphate corrects the condition.

Closely associated with these minor elements in the minds of many people are the vitamins necessary to plant growth. They are essential for healthy development and crop production, but it is thought by many specialists in plant chemistry that plants which receive a balanced feeding medium

and thus have no nutrient deficiencies, manufacture these materials in sufficient quantities to supply their needs.

The pictures accompanying this article show the results of some of these micronutrient deficiencies — all developed under laboratory-controlled conditions to prove that, though needed in microscopic amounts, these minerals are just as essential to healthy, productive plant and animal development as are the familiar three basic elements, nitrogen, phosphoric acid and potash.



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BUTTERFLIES IN THE GARDEN

By F. MARTIN BROWN

THERE is nothing more lovely on a warm summer's day than to see a Swallowtail lazily drifting from flower to flower in a garden. Few gardeners realize that they must pay for that beauty. The immature stages of butterflies are among those "nasty caterpillars" that chew at the leaves of garden plants. To be sure there are few butterfly caterpillars that are a menace to gardens, as most of the really noxious caterpillars produce moths. The great sphynx moths that come at evening to dip their long tongues into the petunias and phlox and columbine were once the thumb-thick green and brown bald caterpillars that ate the leaves of your tomato plants or woodbine. The swarms of "millers" that plague us each spring were, a little earlier, the cutworms that gnawed at your young plants.

The giant Tiger Swallowtail that has been around your garden for days this summer was produced by a thick green hump-backed caterpillar that fed upon the leaves of the wild cherry growing in the corner. The Black Swallowtail with its rows of bright yellow spots grew up on your carrots where its black, yellow and green caterpillar was artfully camouflaged. The golden yellow or orange butterfly with a black border on its wings probably came into the garden from a nearby field where its caterpillars fed on alfalfa. Thus all of the butterflies, and their relatives the moths, have taken their beauty from the plants about us.

A very few of the butterflies may be real agricultural pests. Once in a great while the balance of parasite and host is upset and a plague of Pine White Butterflies denudes our Pon-



derosa Pines. In the cabbage fields an imported butterfly, the European Cabbage Butterfly, has been known to be a pest. On the east coast and in the south where *Aristolochia*, Dutchman's Pipe Vine, is used to shade porches I have seen the caterpillars of the Green Swallowtail reach the nuisance level. Here in Colorado I know of no butterfly that really is a pest, though my wife is annoyed sometimes when a few caterpillars of the Variegated Fritillary nibble at the leaves of a choice *Viola*.

Butterflies are attracted in a garden by a variety of flowers. It is interesting to see which ones visit what flowers. The blossoms of privet with their musty sweet odor seem particularly attractive to the Angle-wings, Red Admiral and Painted Lady. The sweet scented, cultivated *Aesclepias* are attractive to the Swallowtails, to the Sulphurs and to a host of small blue and brown Hairstreaks. The deep-throated nectar-producing flowers all are visited in the dusk by the Sphynx moths. These swift-winged visitors, sometimes mistaken for hummingbirds, unroll a tongue that is inches long to probe the nectar pots. If you grow *Yucca* in your garden peek into the waxy bells when the

plant blooms. The little white moth you see there is essential to the plant. The pollen of the Yucca is so heavy it must be carried from flower to flower or there will be no pods and seeds. The Pronuba Moth gathers pollen at one flower, rolls it into a ball and carries it to another. There it carefully places the pollen ball on the stigma. That assures a set of seeds. The moth does not do this out of altruism. No indeed. She next climbs deep into the bell and thrusts

her sharp ovipositor into the side of the pistil and deposits several eggs. You can see the result of this the next time you break open a dried Yucca pod. Notice how the row of seeds is bored through by the Pronuba caterpillar as it eats its way from one end to the other. The few seeds that escape continue the Yucca into another generation. Her offspring take a mighty toll, but in return, without the Pronuba Moth there would be no seeds set.



Commercial establishments may be made attractive by landscaping. Mrs. Ruth Wick-ersham believes this and practices it at her restaurant, in Colorado Springs, "Ruth's Oven."

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COLORFUL MAPLES FOR COLORADO

By RUTH A. NELSON

THE title above is definitely an expression of "wishful thinking." A year or so ago friends brought back from a trip some brilliant kodachrome pictures and glowing verbal descriptions of fall coloring in the Utah canyons. The predominating color was a very distinctive rose or pinkish red. All who saw these pictures became enthusiastic over *Acer grandidentatum*, the big-toothed maple, a close relative of the handsome eastern sugar maple. Here was a suggestion that this western maple might prove able to withstand our severe growing conditions and so add a new and beautiful species to the parks and gardens of the Rocky Mountains. Some attempts were made to obtain seed but none that we received germinated. So, determined to try this species for horticultural purposes, Kathleen Marriage and I set out, about the middle of May, to find it in its home and bring back living plants.

I have been interested in this tree since I saw its beautiful autumn color in the Wichita Mountains of southwestern Oklahoma several years ago. There is a small isolated colony there considerably east of the main range of the species. This maple has a wide distribution from the mountains of southwestern Texas to Idaho and northwestward but some of the best stands are in the canyons between Provo and Logan, Utah. So there we went, our car loaded with collecting paraphernalia.

By the roadside a few miles north of Price we first saw its bright green foliage and were excited to discover that the branches lying on rich moist earth had rooted freely. Here it was in almost full leaf so we went on northwards, hoping to find it in a



A leaf of Acer grandidentatum collected in autumn, showing the "stubby" aspect of the mature leaves.

less advanced stage of growth. Our next thrill came when we found hundreds of seedlings. These had germinated in a packed bed of small sharp rocks and it took considerable diligence and patience to pick out the rocks and extricate the long slender roots and rootlets of the babies but we secured about three dozen and packed them carefully in moist sphagnum. We were still hoping for dormant rooted layers and in that search I climbed many canyon slopes. But on these rocky side walls the low branches lying in the leaves did not seem to root freely. Finally, in the north fork of the Provo Canyon, near the upper edge of the "maple belt" where the buds were just breaking we secured some good rooted layers.

This maple has a tendency to grow in clumps rather than as single large trees, but in the most favorable locations or where it has been pruned it forms a small or medium sized tree with a straight smooth, gray trunk and a round or oval compact head. On the higher slopes it grows as tall scrub, much as our scrub oak does. The mature individual leaves are quite similar to sugar maple leaves



A twig of Acer grandidentatum showing young leaves in late May.

with few large blunt teeth and approximately parallel sides to the main lobes. The young leaves appear more sharply toothed.

Our precious seedlings and "layers" were planted at home in a mixture of sand and peat in several different situations, and at the time of this writing, they are alive and growing. Perhaps we shall have more to report on this subject at a later date.

How About Dinosaur?

Some folks are wondering what the present situation now is regarding the proposed dams in the Dinosaur National Monument. There is little change in the setup at present. There was a bill before congress to approve this dam program, but it has not been acted upon. In the meantime more people can actually see the Monument by car and boat and will be able to form an opinion of its value to ALL the citizens of the U. S., and there is also an increasing sentiment against the unlimited spending of money by the Reclamation department. At present the delay is for the good.

The situation still remains that there are very few reasonable reasons

for building a dam in this scenic canyon, but the powerful governmental and private interests continue to pour out misleading propaganda as to the great commercial and recreational values to be gained by these dams. Actually the only considerable or lasting benefits would go to a limited few while all the people of our country would lose a irreplaceable wilderness area. We will keep our ear to the ground and sound the warning when it is the appropriate time for all conservationists to write their representatives in congress.

This Dinosaur Monument controversy has come to be recognized as a showdown between those who value the unspoiled places and those who would spoil them for the sake of building a spectacular dam or to make a few million from the cheap power that the dams are supposed to produce. There is really no controversy when ALL the facts are known.

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A NATURAL HISTORY OF WESTERN TREES

By DONALD CULROSS PEATTIE

Illustrated by Paul Landacre; Published by Houghton Mifflin Co., Boston.

Reviewed by Julia M. Mullett.

DID you know that the pale toned "knotty pine", so popular with interior decorators is Idaho White Pine, and that wherever it occurs on a commercial scale it is almost certain to be the most valuable timber in its region? Did you realize that the stunted Torrey Pine of the Mesa can become a lawn tree of luxuriant foliage, and that the cultivated Colorado Blue Spruce of studied symmetry and queenly frosted elegance bears little resemblance to its wild ancestor which is predominately dark green and infinitely more beautiful? Could you list the good qualities of the most feared and hated of all trees, the Mesquite, which is every year extending its ravages, spreading desolation where once was wealth? Have you ever observed the particularly noble grove of White Fir in North Cheyenne Canon, near Colorado Springs?

This is the kind of information which is crammed into the seven hundred pages of Mr. Peattie's new book, "A Natural History of Western Trees." There are, in addition, descriptions, common names, and localities of more than two hundred trees, and exquisite and detailed illustrations which make them easily identifiable. You cannot absorb it all in one reading. It is a classic which should be on every bookshelf in the Rocky Mountains, the Southwest, and the Pacific coast.

It may seem like a left-handed compliment to say that such a distinguished book belongs in the "popular" series, but it will undoubtedly

be read with enjoyment by hundreds of people to whom the average botanical terminology is a little less intelligible than Greek. It should make everyone aware of the importance of conserving one of our great natural resources--Trees.

When you read that some of the Redwoods have survived for more than thirty centuries you are filled with awe. How can the Giant Sequoia go on growing for so long, without signs of senility, when the Cottonwood is decrepit at seventy-five years of age? What can we do to save these magnificent trees from their worst enemy, man, who has hacked, sawed and burned finer specimens than are now standing? And this havoc was wreaked not upon private lands, but upon public domain. To date, the preservation of the Redwoods has been the work of private individuals, and the state of California through its park systems. Surely this is a national responsibility?

We are cutting the beautiful Sitka Spruce ten times as fast as it is replacing itself. The wood does not split, warp or crack and we use it in the sounding boards of pianos, violins, for the pipes of organs, and for ladders, bleachers, for heavier-than-air craft and for paper pulp. On the Olympic peninsula, where it attains its greatest stature, you can still drive for hundreds of miles on a single auto highway through virgin wilderness where the majestic trees interlock their crowns and completely shut out the sky. How can we preserve this

for posterity?

The never ending importance of trees! Our Western Hemlock is one of the great sources of rayon output and wood cellulose, from which plastics are made. The Douglas Firs yield the railroad ties on which tracks are laid, and holds the lead in producing plywood. The Western Red Cedar is the leading shingle material of the United States, and probably, the world.

A more dignified name for our delightful Scrub Oak is Rocky Mountain White Oak. Mr. Peattie says it is appreciated as a delicacy by horses, Arizona Wild Turkey and Rocky Mountain Mule deer. To this can be added the fact that its low, shiny, foliage is a perfect background for the very modern or ranch type house, and it has the inestimable value of needing little or no care.

But, to come back to Mesquite. In the lives of many Southwest Indian tribes it was the most important of all trees. The Papago house was commonly built of it. Paddles of Mesquite were used to shape pottery. A snag of Mesquite was used as a plow. The pods were eaten raw, boiled, or stored in the ground. They were also fermented to make a mild alcoholic drink and used for flour for cakes and mush and for feed for horses. The pods also produced a gum which the Indians chewed and from which they obtained a black dye. The same gum took the place of the gum Arabic of the Old World for wounds and sores, and was a successful medium for mending pottery. But in fifty years the Mesquite has crossed Texas from the West and South, where it was always native, to southeastern Colorado and right over Oklahoma to southwestern Kansas, forming a dense ground covering with thorns so strong and piercing that they are

agony to the cowboy and his horse.

Mr. Peattie spent fifteen years in preparation for writing this book, which is a companion to a former volume on eastern trees. The illustrations were done by Paul Landacre. When I put it down I wondered why we reserve our ticker tape receptions for people who swim the English Channel or win the British Open Golf championship. We should roll out the red carpet for Mr. Donald Culross Peattie and his talented co-worker, Paul Landacre, because their work is an important contribution to the history, as well as to the natural history, of the United States.

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ROCKING YOUR GARDEN TO SLEEP

Something New in Mulching—Rock

By SARA FISCHER

IT scarcely behooves one to tell garden lovers living on the windy shoulder of Cheyenne Mountain to mulch their gardens for the winter. Well we know that it should be done but less well we know how to make the mulch stick.

For three past windy winters I have watched my straw, my priceless manure, my hard-raked leaves, taken up by the speeding hands of Old Man Wind and scattered to the four corners of the plains. My little fruit trees, my roses, my perennial dahlias, the infant lilac cuttings I have been so tenderly nursing, are left bare and defenseless, and not even my neighbor's garden benefits by the robbing of this sky-riding thief.

Last winter I put cut Christmas greens over my little plants. It wasn't long before they were resting against the fence—my plants as naked as ever. I have also hoed the manure underground. This is somewhat effective against the Great Raider, but it doesn't take too long for the manure to completely disappear, nor can it be found by digging in the earth. One can only deduce that it too, has gone the way of all good mulch and found resting place in the great alkaline flat that stretches off to the south and east below the shadow of Cheyenne mountain.

This year it is going to be different. I am not easily defeated, and I shall take one more round with Wind. I have a plan. If he can lift rocks and toss them over the escarpment south of me, I am beat. But if he can't, my mulch will stay in place.

Last winter I noticed that the Johnny-jump-ups cuddling between

the flagstone of my terrace, were green all winter. They began blossoming in January, and they never stopped until they had almost obliterated the terrace by June. Out around my bird bath is an infant clematis vine in a particularly vulnerable position, but I noticed that even though my enemy blew off its upper filaments, the rocks around its roots preserved delicate new green shoots which quickly climbed into leaf and bloom this spring.

And so the Great Idea has come to me. The mountain is made of rock, and it is armor to the wind. I shall armor my gardens with rock. Over the good and friendly manure, on top of the raked leaves, I will spread the small rocks and large gravel which we piled up on our service yard last fall after re-gravelling our driveway. We were put out then, that the driveway gravel was so unsuitable, that we were paying for so much weight we couldn't use. Being thrifty souls, we piled this rock back in the corner rather than pay freight to have it hauled away. "We may find a use for it yet," I said.

This winter, when the winds blow, I shall look out with beneficent eye upon its useless huffing and puffing upon my stone-covered mulching. And in the cold of the night, and under the heat of the day's sun, I shall know that my mulch is quietly doing its duty of protecting the earth against the sudden changes of temperature with which this country is blessed.

It has been a back-breaking labor, true. But what gardener ever counted an aching back as love's labor lost? I can look into the face of the hungry

wind and laugh, knowing he must go on empty-handed to the great plains, at least so far as my garden mulch is concerned.

Whoever heard of mulching with rocks? Well, it is often said that there are more ways than one of skinning a cat — I have found, I think, a new way for beating the wind.

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NOVEMBER GARDENING

YES, there is garden work to be done in November. There may be many warm, sunny days when it will be fun to work outdoors and there may be stormy days when it will be more pleasant to read indoors about the garden that you hope to have next year. This month might be a good time to do a little looking backward to review the successes and failures of the past year and to look forward and make plans for better gardens next year. This might be a good time to put on paper some of the ideas that you will want to carry out in the spring.

It is impossible to work with plants much without wanting to know more of the fascinating stories about plant growth and to learn more of the association of insect, bird and animal life with plants. We always wish that we knew more about the basic facts of soils and fertilizers and the new insecticides. Now is the time to get books and bulletins from the library and learn some of these interesting sidelights on gardening.

On pleasant days we should take time to clean up the garden. Put the dead stems of the perennials and the dead annuals in the compost pile, give a last trimming to the lawn edges and to hedges and clean up the walks. There will many things show up in this clean-up that need attention: leveling up the walks, painting the lattice, building that new tool shelter or putting in a needed wall on a steep slope. There may be many pleasant days this month suitable for such outdoor jobs.

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One of the most important of all garden jobs may be done now. That is preparing the soil for next years plants. Where there are vacant places such as where the annuals grew this summer, it might be well to spade in manure or other organic material. Some places may be improved by providing better drainage. All permanent plants will be benefited by a mulch of some available material.

Take a little precaution with the tender things and give them a little help to survive the hot sun of winter by shading them. This might mean wrapping the trunks of young Mountainash, Linden, or Oaks, or putting a lath screen on the southwest of the experimental Arborvitae or Weigelia. It might mean putting a board on the southwest of the trunks of the young fruit trees.

Now, almost all plants should be dormant and not likely to be induced into unseasonable growth, so it is very important that they be given a thorough soaking before the ground is permanently frozen for the winter. If you are not sure how fast the water soaks in, dig down and see, after an hour or so. Trees should be soaked for at least 6 feet, shrubs for 4 feet and perennials for 2 feet.

Keep your thumb green overwinter by bringing some plants indoors. A sunny window may take a few potted plants and even a north window will provide a place for some of the newly popular foliage plants, that require little sun. The Amaryllis, Hydrangeas, Poinsettias, Christmas Cactus and such that were out under the shrubs over summer should be established in their indoor places now. Look over all these things for the first signs of mealybug, aphids or other damaging insects and take steps to eliminate them before they cause much damage.

Probably by now the Hybrid Tea Roses are dormant enough to be ready for the annual hilling up with soil for the winter. It is often easier to bring in dirt from the annual beds and take it back in spring. Just cut back the ragged, long stems of the roses now and leave the extensive pruning until spring. Be sure that the rose beds are watered thoroughly now, and if there should be much open, warm weather later, give them a soaking once a month unless the ground is frozen.

Arrange to give some protection to those shrubs under the eaves or other plants which are subject to snow damage. Trees may be trimmed now to avoid snow damage. Bad V crotches and overly long horizontal limbs may be cared for. If there are evidences of damage to your trees from insects, disease or mechanical damage, call a reliable tree man to check them and recommend treatment, when appropriate.

Store bulbs of Gladioli, Dahlias, Cannas, other ornamentals and the root vegetables in a place as near 40 degrees as possible and where it is neither moist or bone dry: a situation like the oldfashioned pit cellar.

Now is a good time to look around for the beauty that may still be in a well-planned garden—the bright berries on the shrubs, the colored bark of Dogwood and Willow, the appropriately placed evergreens, the variously colored bark of trees and the architectural features such as flagstone walls and garden furniture. Gardens may be planned to be interesting in every month of the year.



December, 1953

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The Green Thumb

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The Green Thumb

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Colorado Forestry and Horticulture Association

Organized in 1884

"To preserve the natural beauty of Colorado; to protect the forests; to encourage proper maintenance and additional planting of trees, shrubs and gardens; to make available correct information regarding forestry, horticultural practices and plants best suited to the climate; and to coordinate the knowledge and experience of foresters, horticulturists and gardeners for their mutual benefit."

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 Secretary-TreasurerMildred Cook
 Editor.....George W. Kelly

Looking Backward and Forward

With this issue we complete 10 years of publishing the Green Thumb. Compared with the first small issues we have grown considerably in size, and, we hope, quality. We are still no where near as good as we might and should be. We have no regrets for what we have not done, for we have done the best we knew how to do with the time and money available. We hope that we have helped many people to have better gardens, and to appreciate the beauty around them.

We have seldom been able to go out and get just the stories and pictures which would be most appropriate for each month, but we have usually had to take, each month, the best material that our many good friends have contributed and pass it along to our members.

We have never tried to duplicate the good material that the older garden magazines, with a large circulation, are able to furnish, but we have always kept in mind that our function was to tell people here that "Rocky Mountain Horticulture is Different" and how they may modify their older garden practices to fit this climate and learn the plants which will grow best here.

So long as time and money is made available we will continue to try to improve the material in the *Green Thumb*. This coming year we will make a special effort to help those thousands of young people who have the responsibility of developing a garden for the first time. We believe that if we aim our stories more at these people that it will do more good. And we usually find that even the older gardeners like to have their information given in simple words, and plainly illustrated.

We would like at this time to ask every reader to write us suggesting the sort of stories that they would like, and also telling us of those who might write about some garden subject of interest to others. We need good photographs and drawings of plants and gardens. If we will all work together we can make the *Green Thumb* more valuable and reach a greater number of people. Each present member should be able to get at least one more to benefit from the helpful advice given.

DECEMBER ACTIVITIES

Christmas seems to have hit us even earlier this year than usual, so no indoor or outdoor activities are scheduled in December. If you have a meeting or trip to suggest call us and we will help arrange it.



Denver's City Hall all lit up for Christmas.

Christmas

Christmas is the one day of the year when we all try to act as we should do every day of the year; that is, try to think of other people and do things to make them happy. Of course all good gardeners are the kind of people who are naturally thinking of others and are doing things all the year to make it a little better world to live in, so they do not need to "bust themselves" and scramble madly around to get just the sort of present which will fit every friend. Garden tools, garden books and magazines, bulbs, house plants, nursery orders for trees to be delivered next spring are all appropriate presents and much appreciated.

DR. CHADWICK WILL SPEAK IN JUNE

The Men's Garden Clubs of America, The Denver Botanical Gardens Foundation and The Colorado Forestry and Horticulture Association have jointly invited Dr. L. C. Chadwick to come to Denver June 10th and show his remarkable pictures of European gardens and Botanic Gardens. Dr. Chadwick is one of this country's highest authorities on ornamental plant material and is a forceful speaker. He has recently returned from several months spent in European countries studying plant material and taking pictures. More details later, but save this date.

IT IS UP TO YOU

IT is a strange bit of human psychology that there is a great fuss made about the bootlegger or manager of a gambling establishment, but those ordinary people who support these places are rated as respectable citizens.

If we want better government, a cleaner state, better schools and such, it is up to each of us to avoid the encouraging of bad practices and law violations, by not patronizing the questionable places.

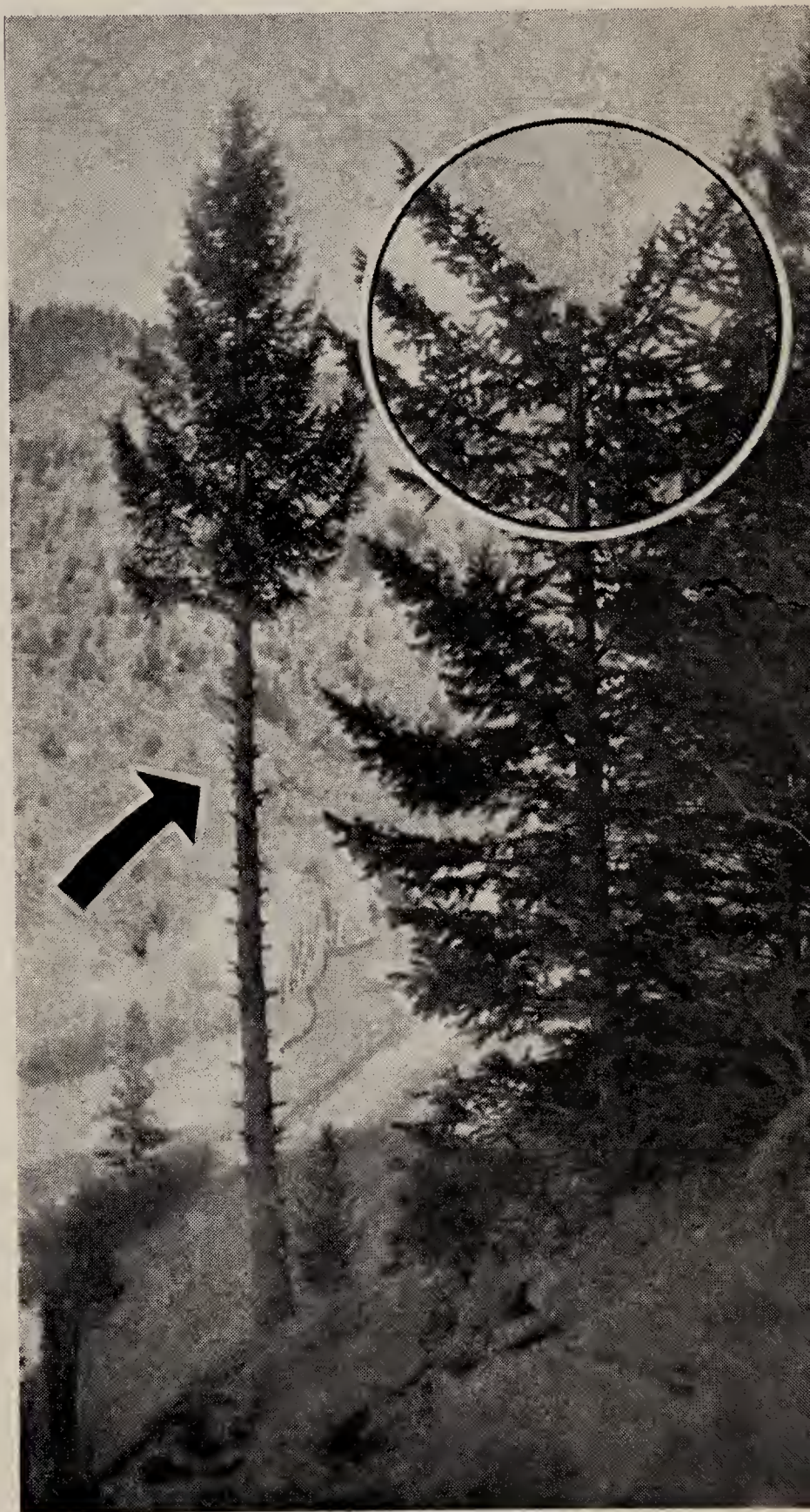
We will have a chance to practice this principle this fall when we buy our Christmas trees, as all state control of Christmas tree cutting has been removed, until a more workable law can be established. The fact still remains that many trees are cut under conditions which do not leave the forest in the best of shape for beauty, soil erosion, water retention or further cutting operations.

The following stated standards for Christmas tree cutting are still good, even though not officially enforced. It will be up to each of us this fall to inquire from the Christmas tree dealer whether these rules have been observed and buy only from those who can give a favorable answer.

1. Christmas trees shall be cut only from overcrowded stands, needing thinning. In the thinning process the operator shall leave a stand of healthy trees spaced about 8 to 10 feet apart.
2. The entire tree shall be felled, leaving ground space for young, healthy, fast-growing trees.
3. Brush shall be lopped and scattered so as to lie flat on the ground, to reduce fire hazard.
4. Stumps shall be left 8 inches in height, or less, on the high ground side.

5. Christmas trees shall not be taken by topping standing trees.
6. Boughs cut for decorative purposes shall not be removed from a standing tree to a greater height than one-third of the total height of the tree, starting from ground level.

Now, if you want control of Christmas trees, it's up to you.



THE FAMILY AND SHADE TREES

By MRS. TEMPERENCE O. GUPTILL

As given at Shade Tree Conference in Denver, February 11, 1953

THE subject I am going to talk on, The Family & Shade Trees, will deal mainly with the women and the children of the family. I am a little hesitant in attempting to tell a westerner anything new for you are usually far ahead of us. While it may not be new to you, however, the woman's viewpoint may have some value.

You will either be shocked or disagree when I say first, that a large percentage of women are now the "head of the family," in fact, you may have suspected it for some time. This is not from choice, but necessity. Seventy percent of the wealth of America, through inheritance, is in the hands of women and they are taking an active part in the managing of their affairs. To the homes of the older women, the war widows with children, add the divided homes and the homes of the men away in service, and you will see that a very large percentage of homes are being run by the women. This is changing their mental outlook. Seldom do we meet the clinging vine type of woman who once was thought to typify the perfect wife. It is no longer smart to be dumb.

The need for women's services in business, her labor in industry and the many opportunities for which she measures her talents, has taken her out of the home before and after marriage and she must frequently manage a house and children, *and* her job. The high cost of living and the ambitious desire for home ownership is another strong factor in a woman continuing after marriage to hold a place in business and also fulfill her destiny as a wife and mother. Labor-

saving devices, with the power of electricity, has helped to free the homemaker from the drudgery of housework, if not actually, it has mentally. These same mechanical assistants give more leisure to the woman who is at home and affords her the opportunity for working for community betterment.

Between 1940 and 1950 home ownership increased 11%. Fifty-eight percent of the dwelling units of this country are owner occupied and 25 million are owner occupied living in single units and this is definitely on the increase. This is a healthy sign for America. A family living in its own home develops pride in its home and community. It is even proud of the mortgages. It is home and land belonging to them. Children are sensitive to home ownership. It gives them security and a sense of belonging. It does much to keep a family together.

Here begins an interest in home grounds, community life and the training of the children in responsibility toward our natural resources and it is *our* duty as an organization and individually to encourage and help develop this interest.

The garden clubs of America are doing magnificent work in arousing the interest of women who, before becoming members, had no contact with gardening and joined for the social need. The knowledge and benefits gained bear rich fruit. It is easy to go from the garden plants to a more serious and constructive interest in community planting and care of shade trees. Trees have tremendous sentimental appeal to women but few realize the necessity of trees to their well-being; there is practical therapy

in green growing things; pleasure and health combined. In trees we find tranquility and spiritual refreshment and through them comes the inspiration for poetry and music. We respond to their beauty and artists paint their pictures at all seasons of the year.

God created man and placed him in a garden, not in barren waste. The waste came later and was man made, but from the beginning a famous tree and its fruit has held an important place in the history of the world. No one has ever quite figured out the difference it might have made had *Eve* not liked apples.

Each year the public's increasing interest in the beauty of the fall coloring carries them farther from the cities in a desire to see this phenomenon of nature. It is not just a desire of the family to take a ride to some distant state, it is a need for some fulfillment within us. It is our reaction from the destruction of wars, that we are constantly reminded, is still going on in the world. We are conscious within ourselves of what we can lose and it becomes more precious each year. The seasons' changing beauty fills us with gratitude as we seek those far places and view the magnificence of golden mountains and crimson valleys — a priceless heritage from one generation to another. What would it mean to people who are willing to drive hundreds of miles seeking such wide spread beauty if we could not preserve for them these natural resources not only for their glorious beauty but their conservation value to the country. The dangers in losing this wealth of our country does not come from insects and disease. There you know what you have and are reasonably sure of how to combat it—the real danger lies in our people's extravagance, we

have been a land of plenty and of tragic waste. We have listened to our chemist tell us a pill will take the place of food. The pills grow more expensive and we have more ills. The antibiotics and the synthetic substitutes have been developed and put into use. We are now weighing their value against more natural and earthy cures. We can no longer live on the fat of the land. We should insist that our children be taught that the wasting of these natural resources will deny to the coming generations their birthright. We must set an example not by passing more forbidding laws but in demonstrating to them our own responsibility and individual carefulness. We can put up "no trespassing" signs and threaten punishment, but to the eyes of the child who understands not the meaning of nature's kingdom, or the adult whose selfish greed heeds not, it is a challenge and invitation in the wrong direction.

With the child just starting in school you have the most fertile ground in which to plant the seeds of knowledge. Young children love nature and for her have a listening ear. It is when this interest has been neglected and the child becomes the youth, restlessly seeking excitement and adventure, that he may destroy valuable property due to his ignorance and lack of understanding. Arm the child with a knowledge of trees and plants when he is interested and you will have less juvenile delinquency.

There is need for a school forest in every community, where children could be given practical instruction in nature's classroom and if properly planted and cared for would eventually pay its own way.

Conservation extends from the poorest back yard to the finest park

and when you have ugliness and barren yards in a city or town you will have costly upkeep in your parks. You destroy what you envy. The slogan "Plant America" has had widespread appeal to the imagination of all the people, especially has the individual home benefitted by the promotion of this slogan—whose objective is "to conserve the land to make greener and more productive for abundant life, beauty and recreation." It is a grass root movement that attracts the interest of all civic organizations and through them the local officials and the press. It has helped to focus attention on the need for planting shade trees and the greater need of maintaining those we have.

There is a new field in the small home development, many entirely without adornment of trees or green growing plants—they are in every section of the country. Last November I motored west to Tulsa, Oklahoma, through 13 states and saw them everywhere. They need help individually and collectively if these new developments are to grow successfully. Homes and streets should be planted to grow in beauty and increase in value with the years.

Changes in landscaping and planting must go along with changes in architecture. There is not space for the American Elm or the larger trees in the new small home developments. There is a demand for smaller and more disease-resistant shade trees of a faster growing variety. Plantings should be natural and have purpose.

More thought should be given to the planting outside of a picture window and less to the Venetian blind. No one ever wrote a poem to a Venetian blind.

Evergreens that are planted as a hedge make a green all-year-round

screen at whatever height desired. It will bring the house and garden into the proper relationship and give the privacy needed for the family.

The same rule holds good, only more so, for the house of modern architecture with its high walls of glass which brings the out-of-doors into immediate focus; here the skill of an expert is needed to obtain the harmony, beauty and comfort necessary to good living. We know from studies and tests that the climate around our house can be controlled by what we plant, and where we plant it, to give more comfort inside and outside the home.

Planting and mental health go hand in hand. Gardening is used successfully as therapy treatment for the mentally ill in many institutions. Psychiatrists emphasize the influence of our childhood memories on our adult enjoyment of life and who does not remember some one tree that stands out among others in our youth. In mine, it was a magnificent sycamore tree standing beside the road near my grandfather's place in Ohio. It was the halfway mark returning home from school or the beginning or end of a pony race. Many years later I learned it had not been my tree alone, other generations claimed its friendship. When the highway program demanded the sacrifice of this beloved landmark, many stories were told and printed testifying to its greatness. That location is still referred to as "near the old Sycamore Tree" and so it lives on in memory.

It is this sentiment of each generation for our personal trees that increases our love and understanding of their need.

This winter it has been my privilege to meet a group of women from the Far East studying in Boston. They represent a number of professions—

medicine, agriculture, education and the Arts. Each spoke of her country's need for reforesting and planting trees in towns and cities; and that they were gathering ideas and practical information on this subject to use when they returned to their countries. As one very charming young medical student put it "one cannot cure hunger and disease with medicine alone, it requires the help of nature and we must improve our land and in so doing the health of our people will improve."

The Indian Government has set aside one day a year for the planting of trees in which the school children take part. Unfortunately the percentage of loss is great by animals on the loose and the lack of water to keep the young plants alive.

In Israel and Palestine a successful plan for planting has been going on since before the war. Here their percentage of loss is small, they have brought irrigation along as they planted — especially in the orchard plantings and now the country has a less arid look. It is an impressive sight to the traveler to see the devotion of a family to the trees they have planted, many carrying water long distances, not for their own use but for the life of the tree. The Philippines were replanting their avenues of trees before the war rubble had been cleared away.

Japan has a complete new Forest policy passed by the Diet last summer after a two year study by Mr. Tom Gill, Secretary of American Forestry. South America, Formosa (who has set aside one-seventh of this year's budget for Forestry) and Mexico all have received these services. It is impressive, inspiring and world wide in policy.

I believe women's interest in trees could be increased with a few simple

reminders. *First*: to remember in her busy life of diversified interests her reading time is short. *Second*: realize that she appreciates technical material and advertising written in popular terms with a little more drama and appeal to sentiment. *Third*: give her a clear understanding, in writing, if possible, of what the job needs and the cost. Here is where many tree companies run into difficulty by assuming a woman will react as favorably as a man to fluctuating prices.

Garden tools should be mentioned in relation to women's use. At present many of the standard tools are too heavy and the handles too large for her hand. As the new light-weight metals develop more changes will be made. Women have not been accustomed to buying the outside home equipment and do not spend money as easily for that purpose as men. To a woman a shovel is a shovel, to a man it is the steel that counts and the construction of the handle.

Woman with the versatility of her sex is continually projecting herself into new and interesting activities. Not long ago an article written by Mr. Everett Smith attracted considerable attention when it appeared in one of Boston's leading newspapers. Mr. Smith's story told of the work voluntarily being done at the Arnold Arboretum by small groups of Garden Club members. These women under the direction of Dr. Lewis Lipp work through the spring and fall collecting seeds, grafting, budding and collecting material for propagating beds. Here is an idea and opportunity not only for women but for men who enjoy working with plants and seedlings to contribute their labor for public benefit, just as important as a gift of money and will be repaid immeasurably in pleasure and health.



Drawings by Pauline Steele

LET'S MAKE POMANDER BALLS!

By KATHRYN KALMBACH

OUR great-grandmothers made and used them to keep closets and linen drawers fresh and sweet. Now that the art of making Pomander Balls is being revived, here's "how"—

Materials needed are simple: small or medium sized seed oranges (not navels), firm apples, lemons or limes, whole cloves, and a sharp instrument to puncture the fruit skins.

Method: make a row of holes around the stem end of orange, or other fruit, and push a whole clove in each hole. For next row make holes for the cloves in alternate spaces with this first row. Keep cloves about one-fourth inch apart in all directions. Proceed to puncture skin and insert cloves over whole fruit. Set clove-covered fruit aside to dry in airy place. Fruit should dry nicely



in our dry homes in two or three weeks. When dry and firm, wrap ribbon around fruit in two directions (see sketch) and tie snugly. Add a loop for hanging.

Balls may also be covered with net or lace and hung from ribbons to perfume clothes closet.

Another suggestion: Make enough balls to fill a pretty bowl, and keep in a covered jar (after drying, of course). When guests are expected, arrange in bowl and display on a table or shelf. Your whole room will be spicy and sweet!

So let's make Pomander Balls for ourselves or for gifts! They are fun to make and different to give. Try hanging some on the Christmas Tree!



Spruce Gall Aphid Injury

From The Shade Tree Digest as presented by Swingle Tree Surgery Company

Spruce trees often are disfigured in appearance and stunted in growth by numerous pineapple-shaped growths, known as *galls*, that develop near the tips of the smaller branches and twigs. The galls, which may become one-half inch or more in length, usually are first noticed during the late spring or early summer. At this time they are green in color with faint to pronounced reddish streakings, roughly segmented, and sparsely covered with malformed needles. Later in the summer they turn brown and die together with a portion of the affected twig.

If one of these cone-like structures, while still green, is thinly sectioned with a razor blade, large, open pores or cells will be noted. In these cells, as a good hand lens will reveal, are grouped tiny insects; a dozen or more may be found in each cell. These insects are the young of the spruce gall aphid; their feeding at the base of newly developed needles causes swelling of the plant tissues and formation of the gall.

In lightly infested trees, hand picking the green galls is feasible as a control measure; heavily infested trees should be treated by applying either a dormant spray in the early spring, or a contact spray late in the summer after the galls have opened and the young aphids are exposed.

"There is a 'blue rose,' the hideous *Vielchenblau*, a rampant climber, and people who admire it will probably also like *Viridiflora*, an equally ugly thing with so-called green flowers." (Quotation from page 204, "The Rose in America," by J. Horace McFarland, published in 1923.)

PERENNIALS

By MRS. ROSE TUGGLE

ONE writer said, "Hollyhocks are jolly, delphiniums are inspiring and monkshood are mysterious. We put hollyhocks near our gates and doorways for their cheerful, welcoming, come-in-and-see-us-air, and we put delphiniums in a quiet place against a background of green where one may contemplate their heavenly color undisturbed. We hide monkshood under the trees in dark and shady places, where they may be rather furtively sought in the chilly evenings of autumn."

In many old-time gardens most of the plants were hardy perennials, such as Bleeding Heart or Dicentra, Phlox, Delphiniums, Golden Glow or Rudbeckia, and Peonies. Hence, they are known as "old-fashioned flowers." These old-fashioned flowers are the background of every garden even now, because of their permanency, hardiness and variations in height, color, foliage and nature of bloom. Some perennials will flower the first year if the seed is sown early enough, but most of them begin to bloom the second year from seed and increase in size and beauty every year when the proper culture is given them. They give the best effect when planted in groups or clumps of three or five plants. When they are planted in a border it should be three to five feet wide, depending upon the size of the grounds. Plant them at least three feet from a hedge or other shrubbery.

To have success with perennials one should have some understanding of the nature of these plants. Some are rather tender, some are evergreen and every one has its particular likes and dislikes. Amateurs usually begin by planting perennials

because they innocently think that these plants need no more care after planting. This to some extent is true since they do not need planting every year, but they do need cultivating, fertilizing, staking, trimming and dividing. Slow growing plants like the peony should not be divided for ten or twelve years if they thrive and bloom vigorously in the same spot.

Questions asked so many times are, which flowers will grow in the shade, in moist places, in dry sandy ground, and so on. Each plant has its own special likes and dislikes. The shade-loving ones are Aconitum, Asperula, Viola, Hosta, Bleeding Hearts, Astilbe, Lily-of-the-Valley, Mertensia, Primrose, Trillium, Iris cristata, Digitalis, and of course ferns. This is not a complete list of shade-loving plants. It is only a beginning to help the gardener get started. Those growing in partial shade are Anchusa, Leopards-bane, Columbine, Campanula, Gas Plant, Digitalis, Anemone, hardy Ageratum, Coral-Bells, Iberis, Phlox, Viola, Physostegia, Platycodon, Trollius, Veronica, Nepeta and Monarda. Some of the above named will grow nicely in full shade. Bleeding Hearts and Mertensia are lovely near shrubs or under large trees. Forget-me-nots go well among Narcissi.

Among the tender perennials we find Pampas Grass, Geum, Torch Lily, Thrift, Meadow-Rue, Regal Lily, Periwinkle and others. These need special protection during the winter and in early spring, when some of them come thru the ground before frost is over.

The evergreen perennials which retain their foliage the year round are Sweet William, Grass Pinks,

Coral Bells, Iberis, perennial Flax, Sedum and some of the biennials. They are as a rule quite hardy, but leaves or some covering should be put around the leaves of the plants, never on top of them, then carefully clean around them in spring.

A list of the best perennials that can always be depended upon and withstand all kinds of weather are Golden Glow, Goldenrod, Iris, Oriental Poppy, Buttercups, Iceland Poppy, Bleeding Heart, Helenium, Michaelmas Daisy, Pyrethrum Daisy, Shasta Daisy, Alyssum Saxatile, Daylilies, Delphinium, Gypsophila, Hibiscus, Peony, Rock Cress, Monks-hood, Hollyhock, Anchusa, Coreopsis Gaillardia, Plantain Lily, Jerusalem Cross, and Platycodon. These are but a few of the simple and outstanding ones which will never disappoint you regardless of weather conditions. They will reward you with hundreds of blooms if given a little care and cultivation. Many will bloom in late fall. Hardy asters spread and spread, forming great mounded masses covered with myriads of purple and blue, lilac, white and pink stars. These are typical background plants along a fence or wedged in openings among the shrubbery border where they will make a glory high above the lower flowers and shrubs or they may form a bank at the far edge of a sweep of lawn, merging their color with the blue mists of autumn, lending enchantment and mysterious distance to the tiniest plot. To this we add the bold beauty of the tall Golden Glow, Sunflowers and Heleniums, all flowers of late autumn. When properly placed in the garden their bright colors will lead the eye from point to point along the beds and borders, leading it away from the bare places where plants have passed out of

bloom earlier in the season. The Hibiscus also needs distance to make it effective because the flowers are large and very showy and the leaves are big and broad. These flowers resemble the Hollyhock, with a more bold and overwhelming beauty. The Oriental Poppy whose enormous, silky flowers are lovely, make a flaming streak of color throughout the border in early spring. A charming picture can be made by planting the poppies in front of a hedge of Mock Orange, and in front of the poppies, early flowering white peonies, then pink tulips, edging with Iberis or purple Hyacinths. Alyssum saxatile is another nice edging for the above picture.

The lovely pink, white and red Pyrethrum Daisy with the Shasta Daisy make a lovely picture in the border as well as being valuable for cut flowers. Columbines may be planted near or among Iris for they bloom about the same time and the colors go well with the pastel tones of the Iris. That brings us down to low growing plants that are used for rock gardens and edging the border. Iberis is an evergreen and lends itself nicely for edging for it does not spread. The same can be said for Alyssum saxatile. After the flowers are gone the gray foliage against the green breaks the monotony. Planted in masses among blue, red, or lavender Tulips this makes a never forgotten picture. Phlox subulata, Arabis, English Daisy, Pinks, Lobelia, Violets and Pansies all make nice edging plants.

The following points should be considered when making the perennial border: Planting periods for perennials. They may be planted or transplanted either in autumn or in spring. In autumn the days are warm and pleasant, the ground is usually

in good condition to work with, so I do much of my work in the garden at this time. However, for those who prefer to do this in spring, by the latter part of March, or as soon as the ground can be worked in until the end of April is the time for planting or transplanting and dividing perennials. If this work is done in the fall a light covering of leaf mold or leaves is advisable. This should not be applied until after the ground freezes. In the meantime keep them moist and lightly cultivated. After plants are well established, in a year or so, no covering is necessary for the hardier varieties. However, since we have so much dry, sunny weather during the winter a light covering of mulch keeps the ground at a more even temperature, thus preventing freezing and thawing.

Peonies, Iris, Oriental Poppy and Bleeding Heart are planted or divided as soon as they become dormant which is in August. Dutch bulbs are planted from September till the ground freezes. The sooner they are planted the better. Most all perennials transplant better when they are dormant and that period begins after the hottest and driest days of late summer season are over. Plants which are slowest to recover after transplanting are Lily of the Valley, Peony, Baby's Breath, Lupine and Oriental Poppy. Fast growing are Achillea, Boltonia, Helianthus, Phytostegia, Helenium, Shasta Daisy and Chrysanthemums. These need dividing almost every year in order to make them do their best. Then we have varieties such as Phlox, Columbine, Iris, Delphinium and Aconitum, that may be left untouched for three or four years. Among the ones that will not need dividing for many years are Peony, Gypsophila, Bleeding Heart, Lupine, Oriental Poppy,

Iceland Poppy, Tritoma, Gas Plant, and Asclepias known as milk weed plant or butterfly plant.

Many persons make the mistake of confusing hardy annuals with perennials, because these annuals "come up every year," such as Petunias, Poppies, Calendulas, Snapdragons and others. They reseed themselves in summer and the old plant dies but the seeds grow next spring. They are called hardy annuals. Snapdragon as a rule will come from the old root if winter protection is given. Some do this for several years, but eventually they die.

Perennials are grouped into tall, medium and low growing plants. The tall varieties are placed in the background, the medium next, the low growing ones are placed in front. By using a bit of ingenuity one can intermingle the tall and medium ones and can relieve the monotony of three heights one back of the other.

Harmonizing colors should be used throughout the border. The most difficult colors to use are scarlet, deep red and purple. They are bold, strong colors and show up best at a distance. By using white with them they will not clash with other colors. Slight contrasts are permissible and charming if carefully worked out. Know the color of your plants before they are planted, and plant accordingly.

Texture and color of foliage are other factors in landscape gardening. To break the monotony the use of yellow, gray and bluish plants may be used, but carefully and sparingly or the whole effect may be ruined. Climatic conditions determine the choice of materials. Use that which is native to the section of the country in which you live.

Associations of plants is another interesting factor in landscaping.

Group those which have something in common. After the choice has been made the next problem is where and how they shall be grouped. Season of bloom is important to know. Try to have the blooming period extend over the entire season, and the plants so arranged to have a succession of bloom so that the bed is always attractive. Annuals and biennials are a life saver here, for they can be planted among the perennials to help carry on the blooming period throughout the season.



Letters to Sue

(Not to the editor)

Look & Learn Garden Tours!

Quite often I receive letters of appreciation from the many friends we make on the "Look & Learn Garden Tours" — some much too good and funny to keep to myself! This one I'll share with you—

Dear Sue:

As an aftermath of last July's "Look & Learn" tour, perhaps George, you, Charlotte Barbour and Margaret McLister would be interested in the following quotation from a letter just received from my old friend John L. Keena, retired American Ambassador, now living in Durban, South Africa, but who, at the turn of the century was a miner at Victor, Colorado.

"May I express my astonishment and admiration for your prowess as a

a gardener? Think of growing flowers that people would come to see without having drink taken! In some odd way, years in a sterile, cloistered Foreign Service, failed to blanch the greenness of your thumbs. Evidently, you are not one of those poor mortals who are scourged in the jingle—
'Lives there a man with soul so deadish

Who never to himself hath saidish
This my own, my home-grown red-dish!'"

Sincerely,

Jim Stewart.

Don't you agree with me? Would you like to read some more?

—Sue Kelly.

Here is another which I think some of you might try for the fun you will get from experimenting with something you have at hand. . . .

Dear Sue:

Is the enclosed suitable and does it explain the process?

"To make simple, pretty and lasting place cards—take flowers like California Poppy, Snapdragon, Penstemon, etc.—make your place cards the size you want and that will fit the size of the flower you will use. Gather flowers fresh and have ready—one-half or one cup of parawax melted and setting in a pan of hot water. Test it with a flower to see if of the right temperature and that it does not curl the flower. Then dip the flower and leaf and place on a waxed paper arranged the way you want to use it. When cool, place in a slit or opening on your place card."

Sincerely yours,

Alice D. Allum, Sterling, Colo.

Grow Your Own Corsage

Florist type orchid plants now available for holiday bloom. Cost no more than a lovely corsage.

SUnset 1-4828

TRY A LIVING CHRISTMAS TREE!

By THE MASTER GARDNER

YES, if you live in a climatic region where the chances are 50-50 or better that the ground will not be frozen solid by New Year's, and have a spot for a specimen evergreen in your yard, you can, with a little care, "have your Christmas tree and keep it, too."

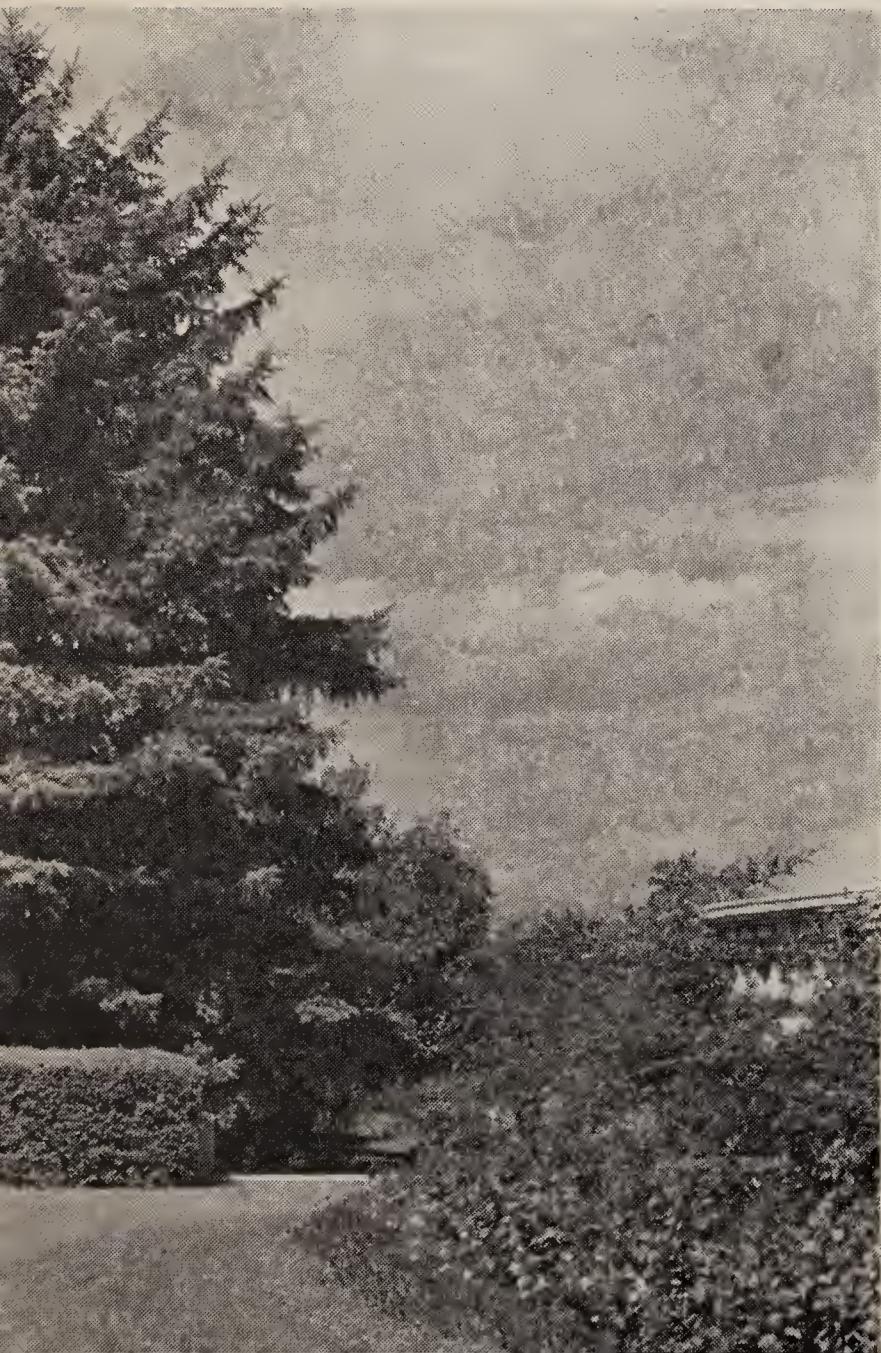
Throughout most of this region the planting site should be thoroughly prepared in late fall—just in case a severe December turns the ground to concrete. Dig a hole at least 3 feet in diameter and between 2 and 3 feet deep, depending on the size of the tree you intend to purchase. Dig the hole a little deeper than necessary, leaving some loose soil in the bottom. The rest of the soil should be placed in a pile and covered with

a heavy mulch of leaves, straw or peat moss.

When purchasing a tree, buy one that is tubbed or balled and burlapped. Without removing the wrapper, wet the root ball thoroughly, then keep the roots cool and damp by placing the entire root ball in a large tub of peat moss. Water it every day, but not too heavily. Keep the tree in as cool a room as possible since excess heat may damage or kill the tree. If a live Christmas tree does not remain in the house too long and if it is properly planted outdoors immediately after the holidays, you should have success. Firs are better than spruces for the purpose as they retain their needles better.

Since the long drought this fall has caused the soil to become very dry to a depth of several feet, water your tree thoroughly after setting it out. Repeat the waterings if the dry spell goes on into the winter. Remember, newly planted evergreens do not "winter kill"—they simply dry out, since their roots are not well established.

Photo by Chas. J. Ott.



Another Bindweed Cure

After reading Daisy Hastings' story "Pincurls for Bindy", Aileen Fluken phoned us about the method that she has used. Where there are just a few vines, Mrs. Fluken uses old olive bottles, pokes a hole in the lid from the inside out, fills the bottle about three-quarters full of Acme Weed Killer, breaks the tip from the Bindweed and inserts the end into the bottle. She leaves the bottle by the plant for a few days and, Presto! it is dead.



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CHRISTMAS GAME

Here is a little game to play at Christmas time when you are thinking about evergreens. Jumbled on the limbs of this tree are the names of our 14 native evergreen trees. See if you can un-

jumble them. If there is one that you can't get turn to page 31 for the correct list. This game was suggested by Bob More from an idea he got somewhere and the art work done by our good friend Claude Hansen.



Two scenes in the attractive and restful garden of Dr. and Mrs. E. A. Elliff.

GARDENS IN STERLING

THE area around Sterling, Colorado, has climatic and soil conditions that would discourage all but the most enthusiastic gardeners. In spite of these conditions many home owners have gone ahead and planted the hardier plants and experimented with the more difficult kinds. They have succeeded in creating a very

nice effect over town and in the surrounding country. Last fall they held a very nice flower show and now are planning for the organization of a garden club which should help to collect and give out the best available information on the plants that are likely to grow there and the best methods of caring for them. Here are shown some of the attractive gardens.

House lines are softened and garden is screened at residence of Mr. and Mrs. P. M. Campbell.





George W. Cassell not only maintains an attractive garden at his present residence, but grows a large garden of flowers and vegetables on the site of a prospective residence. He can well be proud of the giant sunflowers. His small charming visitors enjoy the fragrance and beauty of his flowers.





Albert Lindstrom Country Garden

IN spite of adverse conditions, Mr. and Mrs. Albert Lindstrom have developed a comfortable and beautiful environment for their home and ranch southeast of Sterling. They have set an example that anyone else with equal foresight and labor may copy. The large pine shown were



started from seed many years ago. Flowers, evergreens, hedges and even a small pool add to the beauty and interest. Picnic tables are placed in the shade and protection of the trees and are certainly appreciated in this area of sunshine and wind. One wheatfield is completely surrounded with evergreen trees, and Mr. Lindstrom finds that it increases the yield of grain in this field.





More Sterling Gardens

Opposite page, upper left; Garden of Mrs. Alice Dobson. Center, left; Attractive front of Miss Virginia Woodring's residence. Left, lower; Home of Miss Mary Emma Pouzar. Opposite page, right, top; Garden of Mr. and Mrs. Kenneth Curlee. Right, center; Garden of Miss Virginia Woodring. Right, lower; Rare Dwarf Alberta Spruce at the corner of residence of Miss Mary Emma Pouzar.

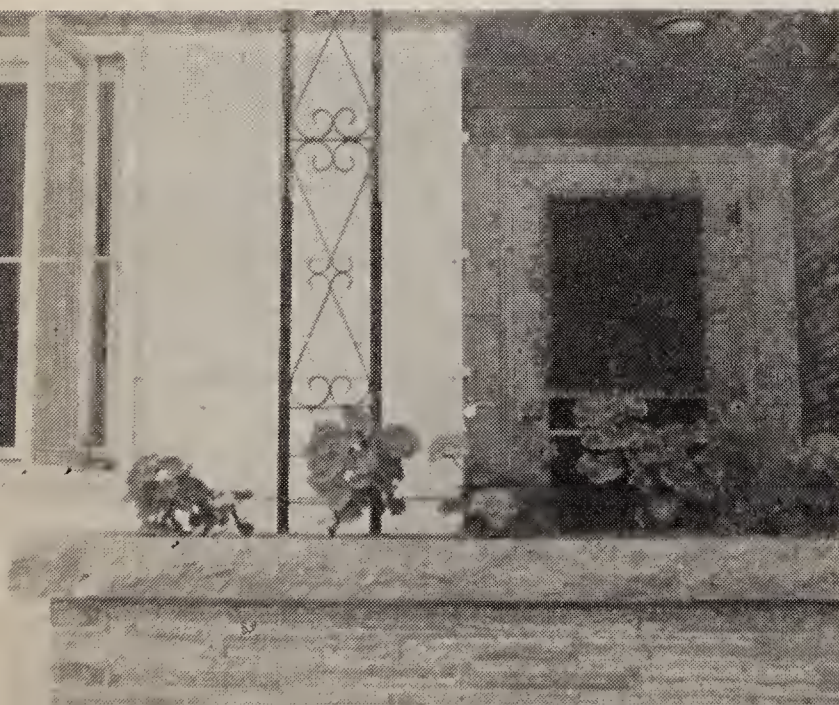


This page, Scenes in the attractive, small, enclosed garden of Wray J. Roninger.





Above, Secluded garden of W. H. Thornburg. Center, The garden of K. E. Anderson is made for use. Below, Shrubs, flowers, ornamental stone and iron work all help to make the home of G. V. Curlee attractive.



Add Gardening Gifts to Your Shopping List

By the MASTER GARDNER

Cold December days and the long wait until Spring effectively remove gardening thoughts from the Holiday season. But think again—have you considered gardening gifts for Christmas?

Most everybody has a relative or friend who never seems to need a thing—one of those folks for whom Christmas gift shopping is always a problem. Maybe you have been missing a bet all these years—a gift opportunity that, because Christmas is a December event, just never entered your mind. Indeed, why *Not* a gardening gift for Christmas?

There are gardening gifts for every pocketbook, from the dime store philodendron to the completely equipped garden tractor. House plants are always appreciated by the ladies. There are many varieties of English ivys, each with its distinctive leaf pattern or shape and habit of growth. African violets and begonias are probably the most satisfactory flowering plants, while there is a great variety of foliage plants—Dieffenbachia, bertolonias, large cut leaf philodendrons, naegelias, and sansevieria to name a few. These have low

light requirements but thrive on warmth and humidity.

Don't pass over the spade, hoe, rake or pruning shears as being too commonplace for a Christmas gift. These and other tools are just the thing for the ex-apartment dweller who now has his own yard. Whet the children's interest in gardening with a junior size tool assortment. Kids are great mimics and like nothing better than to work along with dad in the yard.

Other reasonably priced items include decorative containers for house plants, sprayers, gardening books and garden magazines subscriptions. Gift certificates from nurseries for shrubs and other plants are wonderful for the young couple with the new and unlandscaped lot.

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SIR ALBERT HOWARD'S INDORE COMPOSTING METHOD

By MRS. JAN SCHOO

THE best location is a flat place, well drained, close to a supply of water. In dry weather one will have to water it along with his garden, or even one to two times as much. Partial sun is better than full sun, especially when used without covers.

The size will depend on the area of the garden and the amount of material one has available for composting. The minimum should be three to five feet square, the height, regardless of the square area is five feet. The pile can be partly dug in the ground or be altogether above ground. The main thing of the classical Sir Albert Howard method is, to build a pile in various layers or by mixing the elements in the right proportion of one part (bucket, bushel basket) animal matter to three parts plant residues. He recommended adding a thin layer of earth and a sprinkling of limestone or wood ashes. In consideration of the Rocky Mountain Area with highly alkaline soil we like to advise departing from Sir Albert Howard's method, add a sprinkling of one of the bacterial accelerators, such as Activo or Adco, instead of the lime.

Repeat this procedure until a height of five feet is reached. As an example: On the ground put a floor of absorbing peat moss, sphagnum moss, sawdust, etc. Build up in layers or mixtures:

a. Six inches (3 parts) green matter—leaves, weeds, stalks, chaff, grass clippings, kitchen garbage, coffee and tea grounds, spoiled hay, corn, sunflower stalks, sawdust, pine needles, hedge trimmings, seaweed, brewery

hop, cocoa, buckwheat shells, etc. The smaller the particles, the better and quicker is the decomposing process.

b. Two inches (one part) animal matter—different kinds of manures or substitutes, respectively: meat, fishrests, feathers, dried blood meal (one-half cup), bonemeal (one cup), horn meal, tankage, etc.

c. One inch earth or old compost.

d. Sprinkling of lime or wood ashes to sweeten the pile, alkalize it and restore decay when the soil is acid or, for instance, Activo, when the soil is alkaline, stimulating the biological life of the compost pile. Because of the fact that fermentation brings about an acid condition under which the micro-organisms cannot do their work effectively, it is necessary to provide a neutralizing base, something which will counteract acidity. C and d are ideal for that purpose.

When not in boxes, etc., the heap or pile is tapered toward the top. The center of the top is scooped out in saucer fashion to hold the rain and sprinkler water. The last layer of manure should be thicker than the others and the last layer of earth should also be much heavier and cover the sides as well as the top. The right amount of moisture, not too dry, not water-logged, is important. The pile should have the wetness of a squeezed out sponge. Too much water interferes with the aeration and may convert the heap into a black ill-smelling peat instead of humus, and will lower its fertilizer value. Excessive dryness encourages the wrong kind of fermentation which gradually ceases and

compost takes much longer to mature with loss of many valuable nutrients. Covering is therefore advisable, controlling excessive rainfall and sunshine.

Turning of the Pile

First turning: About three weeks after the heap is completed it is turned, so that what was on the outside of the heap goes into the inside. In this manner every bit of material has a chance to undergo the heating, fermenting, decaying action of the inside of the heap, where the bacteria and fungi can break it down.

Second turning: About five weeks after the first turn, it is turned again.

Third turning: About four weeks later, or three months after the heap is made, it is ready, it is humus-rich compost now.

It does not harm if it stands a little while after the three months period. In fact, in some cases, due to various retarding factors, it may take three to six months or even longer, for complete decay. If not used for some time, it should be turned from time to time, and be covered with burlap sacking, heavy mulch of straw, sphagnum, etc., if it is not in boxes or covered partitions. The best thing is that it be applied to the land as soon as it is completed.

A compost can be started at any time, preferably in September or October and April or May. The pile can then mature to be put on the land, in fall as a winter or all year round mulch and in spring before the growing season as an active fertilizer, a nourishing plant food.

Composting is a process in which bacteria, fungi and other microbes, microscopic soil organisms assume the main role. While there are chemical changes in the heap, it is essentially

a biological process. These microbes must be fed properly on food furnished by the green matter and animal matter, manures or substitutes. While breaking down and converting cellulose, lignin, sugars, into simpler organic substances, into proteins and minerals, they need a great amount of nitrogen, also phosphate and potash but these in much smaller quantities.

In the first strong fermentation period, during the first five to eight weeks the temperature goes up to about 120° to 160° Fahrenheit, then goes gradually down to 90° and 70° Fahrenheit. As the temperature changes different kinds of microbes, bacteria, and fungi come into life and participate in the composting process.

As the decomposition is completed the piles shrink in size by one-third and cools off. Later during the digestive period new food-building bacteria begin to grow. Anaerobic bacteria and different forms of fungi (mycorrhizae) take over. Their function, as in the life process itself, is to use the decomposed matter to build living, organic matter. They store up nutrients in their mass to be used by growing plants. They change basic and trace elements into forms which can be absorbed by plant roots. The compost is no longer a fermenting, rotting material. It has become humus and available plant food.

During the first eight weeks (first and second turning) it is important to aerate the pile, so that oxygen can penetrate easily and carbondioxide can escape. This is effected by some holes in the top down to the bottom by inserting pipes or by using a crowbar. Without air for breathing at this point the right kinds of bacteria and fungi cannot live and the pile is apt to turn acid.

After the first eight weeks, in the now compacted heap in which the volume has gone down to about three feet the anaerobic bacteria need no oxygen; therefore, aeration and turning is no longer necessary.

In a properly made compost pile the decomposition is effected by fermentation and not putrefication. No bad odors of ammonia are given off, no valuable nitrogenous matter is sent out into the air.

A beneficial quality of the bacteria concentrates, compost accelerators and activators is that they will remove objectionable odors, not only from compost piles and boxes but also from septic tanks, etc. Properly made compost must have a repelling influence on all kinds of garden pests so they don't inhabit the heaps, piles and boxes. And many compost gardeners and farmers experience the fact that crops grown in robust soil, rich in organic matter, laden with humus are better able to resist garden pests and insect attacks, which get less and less over the years.

Dr. Pfeiffer declares that plants which get no organic matter and are fed exclusively on chemicals are somewhat like unhealthy people who grow fat on sugars and sweets. According to research done at the Missouri Agricultural Experimental Station, such plants produce an unbalanced amount of carbohydrates, (sugar) at the expense of protein and trace minerals. Insects, he says, prefer these "sweet" plants and are able to attack them more easily. The plants, in turn, provide less healthy nourishment to humans.

Why go to so much work, we hear the writer and readers say of the little article, "New Compost Accelerators," by E. G. Bennison, published in different magazines in 1953. Then we read: "Simply pile up all the

leaves, garden waste, weeds, kitchen waste, straw, poultry manure, and sawdust in an odd corner of the garden. Cover with a thin layer of soil and sprinkle with a diluted solution of one of the new compost accelerators. Then sit back and await results." "It is not necessary to dig a pit or turn the pile over. No chemicals are added." "Millions of harmless bacteria set to work to decompose the organic matter and turn it into humus-laden compost." "The process of decay is quite inoffensive and in a few months the compost is available for use."

Judge and experience for yourself. You will find: There is compost and COMPOST. Bacteria concentrates need constant moisture for their life and work. Air for breathing and retention of heat. A turning once a month will bring the inside out, the bottom on the top and reverse. There will be much better aeration and drainage and equal moisture and heating up everywhere. Weed seeds and diseases are only destroyed by intense heat, existing not at the outside of the pile. Layers of leaves make impenetrable barriers and hold up the heat, their flat surfaces pressed tight together and excluding air. "Keep heat in—keep (too much) rain out, let the heap breathe" is a basic must for a properly acting compost process.

In the different seasons we accumulate different waste garbage materials; in fall and winter more leaves and citrus foods, kitchen garbage. In spring and summer more weeds, grass clippings, green waste materials. Each of these materials with a different nutritional value and different pH. We read in the article: The city with golden garbage (Oakland, California) telling also about Dr. E. Pfeiffer's studies and experiments, "that it takes

more than fifty different strains of bacteria, each with its own digestive job, to transfer anyone of the many compost materials; that summer garbage wouldn't tempt a bacteria family that lives on winter garbage." Perhaps also from this point of view it is most advisable to have the piles, or boxes, well mixed, regularly turned and kept equally moist. Furthermore, in an unprotected compost heap, not carefully handled most of the plant food is leached away or lost to the atmosphere. We can understand that in the commercial making of compost the need makes it desirable to find a swift method of converting waste garbage products at the greatest possible speed (and lowest cost). But in the home made compost the speed should not be forced to the disadvantage of quality. We believe in helping nature but are convinced that forcing nature or replacing nature by culture, will earlier or later lead to disadvantageous consequences. The "Compost Lady" had little chance to compare the results of different composting methods with homemade and back yard compost, as described, but up to now had found no better success.

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ANSWERS TO CHRISTMAS GAME ON PAGE 19

Here are the correct names of the evergreen trees shown with their names jumbled on the Christmas tree on page 19.

Douglas Fir, Engelmann Spruce, Colorado Spruce, White Fir, Corkbark Fir, Alpine Fir, Utah Juniper, Rocky Mountain Juniper, Oneseed Juniper, Pinyon Pine, Limber Pine, Ponderosa Pine, Lodgepole Pine, Bristlecone Pine.

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Photo by Chas. J. Ott.

FOR KIDS OF 8 TO 80

Oregon Grape.

CALLED by botanists, Mahonia or Barberry, and is commonly called Oregon Grape or Oregon Hollygrape. In the east and north there are species which grow into small shrubs and are one of the useful broadleaf evergreens for ornamental use. Throughout most of our mountain area the species found is low growing, practically a ground cover. It suckers freely so that it seems every plant is attached to every other plant in the area.

The leaves do very much resemble holly, and in winter when the sap is not flowing they turn beautiful shades of pink and red, where the

sun hits them. They make one of our best Christmas decorations. They do not transplant easily, but when cuttings or seedlings are started on their own roots they move quite well.

The flowers are bright yellow, little, round balls about a quarter of an inch in diameter and hanging in loose clusters. They bloom very early in spring. Later these flowers will be replaced by rich purple berries of about the same size. These are rather bitter to eat raw but make good jelly.

The roots are bright yellow, as with most of the Barberry family, and have been used as a source of yellow dye for textiles.

Fort Collins Pinon Grove Receives National Attention

From Colorado A&M News

An isolated pinon grove northwest of Fort Collins received national attention recently during an annual meeting of the American Institute of Biological Sciences in Madison, Wisconsin.

A study of the animals found in the grove, which contains some of the oldest and largest pinons known, conducted by R. G. Beidleman of the Colorado A&M College Zoology Department, was presented at the national symposium. The area is due to receive further national recognition in an illustrated article entitled "Island of Pines" which will appear in the fall issue of "The Living Wilderness," national magazine of the Wilderness Society.

Located 14 miles northwest of Fort Collins near Owl Canyon, the grove has several unique features. It is isolated from pinon forests to the south and west by 150 miles and grows the farthest northeast of any similar groves.

Theories have been proposed attempting to explain the origin of the "island" of pinons, according to Beidleman. One is that the grove is all that remains of a continuous forest of trees that at one time extended north from southern Colorado or east from Utah. A second theory is that the grove was planted by an ancient tribe of Indians that may have brought the nuts from the Southwest.

Beidleman began his study of animal life in the grove three years ago to determine similarities in animals found there with those found in pinon forests of the Southwest. He found 95 different species of vertebrates in the area. Comparing the

woodland with southwestern pinon woodlands, Beidleman noted that 57 of the 76 species of birds found were reported from other pinon areas of the country and two of the bird species inhabiting the grove are regarded as universal indicators of pinon woodlands. Several species of birds were found in large numbers in the pinon "Island," but were less common in areas surrounding the grove. In addition, twelve of the area's fifteen mammals also occur in typical pinon woodland areas.

The zoologist noted that none of the 96 species of animals appears to be isolated in the Owl Canyon pinon woodland, but the grove offers an excellent home for some of them in comparison with the surrounding countryside.

Beidleman stated that continued studies of animal and plant life in the grove may throw more light on its origin. He expressed belief that the interesting foothills area appears to be destined to become another of America's vanishing wildlife communities, since commercial limestone quarrying is destroying a good portion of the woodland.

(This is the pinon grove that we have mentioned many times as a spot most appropriate for a state park. Ed.)

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A Young Man's Garden

By CLAIR ROBINSON

The shade garden illustrated was planted by a young chap of 15 while attending South High and working weekends. This young landscape artist is Richard Orendorff, 515 So. Clay, Denver.

This particular location on the north and east of Dick's home had long been a problem spot with almost no sun, only the fringe area having sunlight. Dick decided on a shade garden. He started the project by spading into the soil plenty of peat-moss, leafmold and cow manure, gathered a supply of mostly large native moss covered rocks and a good specimen of grey weathered driftwood.

In the very corner is a concolor fir, happy as a lark in the shade and making a perfect back drop for the pool directly in front.

The pool is an old tub sunk and rocks overhanging the edges, more rocks are scattered throughout the garden. Around the pool are many

varieties of ferns and plantain lily with maiden-hair fern and Thomas Hoagg plantain lily given top billing.

For accent Dick used the driftwood with clematis jackmani trailing on it. *Thalictrum* in three varieties lend a lacy effect to the picture. The floribunda rose, Gruss an Aachen with very little sun, gives with big salmon pink bloom you never see in full sun.

A mugho pine is flanked with *ma-honia aquifolium* and this is backed with Betty Prior floribunda rose.

Scattered throughout the shady portion are Jack in the Pulpit, trillium, trollius, blood-root, *mertensia* and primrose. In the foreground the rocks are chinked with sedums, *euonymus kewensis* and *vinca*.

The tree shown on the left is a Red Silver crab selected for the unusual limb structure.

The overall picture gives one the feeling of a cool tropical spot right here in Denver, and is a good example of what a young person with imagination and the know-how can create.

Edgar C. MacMechen

No one knew more about the pioneers of Colorado and of the West than Edgar MacMechen, "Mac" as most of us called him. He could tell stories of the pioneers, endlessly.

I am sure that he never looked on himself as a pioneer. I don't mean one with an irrigation shovel, or miner's pick, or assayer's balance, but a keener type, a pioneer in civilization and culture—for that is what he was.

I am thinking of the time when "Mac" edited *Municipal Facts*, the city magazine of years ago. Monthly he ran pictures of famous civic centers of the world, in order to convince the people of this city that Denver could become a, more or less, civilized town, instead of the raw mining town it had always been. The exciting boom days of H.A.W. Tabor and sudden fortunes had passed, and in the city government, Robert Speer was trying to develop Denver into an attractive city.

The pioneering idea followed "Mac" into other fields. Colorado's State Historical Museum was a dismal affair, until step by step he put in his figure groups and exhibits. With the help of a relief project he set up these groups, which today are the joy of all children and the practical visualization of the historical days for adults.

His greatest work was in the development of historical projects over the state. His thought was to bring the history of Colorado to its own people, in a way they could understand and, as much as possible, in

the places where it happened. He redeemed Healy House and Dexter House in Leadville, Ouray and Chippewa's burial places in Montrose, Ft. Garland and the Pike Stockade on the Conejos River, where such figures as Tabor, Dexter, Chief Ouray and Zebulon Pike had lived and operated. One can feel their presence in these places. He was busy beautifying these spots, hoping that by doing this, you and I, the people of Colorado, would enjoy them and learn about our state.

Edgar MacMechen was a silent man, so wrapped up in his work, that few people knew what he was trying to do.

MacMechen's pioneering was not at all dissimilar to that of the old pioneers, with their schooners pulled by oxen, but perhaps it was harder. Theirs was largely a physical effort and their goal was easier to understand than the abstract one of culture and beauty. But like them, the pioneer in culture moves only with the speed of oxen, or frequently asses, as in the Bible. He is sniped at by the Indians and the little people of the deep ruts along the road, whose barbs are often poisoned.

Let us hope, and as citizens of the Centennial State, let us see to it, that the seeds planted by this pioneer do not wither and die.

—S. R. DeBoer.

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Season's Greetings

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Practicing what they preach: Sowing Johnny Grass seed. Left, girl groups sowing seed on the Buffalo Range on Genessee Mountain. Right, Izaak Walton Members sowing seed on the new memorial Camp grounds near Rollinsville.

NEW MEMBERSHIPS

October and November, 1953

Mrs. Nancy W. Dahlstrom, 1236 Yuba St., Denver 8
 Mrs. Earl Barrett, 900 So. College, No. 1, Ft. Collins
 Helen M. Harper, 743 15th St., Boulder
 Mrs. Carrie Lancaster, 422 Canon Ave., Ft. Collins
 Mrs. Frances E. Kent, 333 E. 16th Ave., Denver
 Miss Zelia M. Rank, 1016 Peterson, Ft. Collins
 Mrs. Leonora D. Scott, 2205 Balsam Ave., Boulder
 Mrs. Robert W. Harber, Box 311, Canon City
 Ruth M. Underhill, 2623 So. Clayton St., Denver 10
 Mrs. Samuel C. Plummer, 790 10th St., Boulder
 Mrs. Wray J. Rominger, 201 Columbine, Sterling
 Mr. Chester B. Hall, 173 So. Pennsylvania, Denver
 Miss Helen C. Miller, 840 Eighth St., Boulder

Mr. P. C. Williams, c/o O. M. Scott & Sons Co., Marysville, Ohio
 Mr. William J. Claussen, 690 Independence, Lakewood
 Francis Steckel, 3465 Belcaro Drive, Denver 9
 Mr. H. G. Milbrodt, 4340 So. Sherman, Englewood
 Mr. H. V. Cottony, 414 Taylor St., Chevy Chase 15, Maryland
 Mrs. Alice B. Schafer, Box 261, Hugo
 Mr. Zachary Savin, 261 Knox Ct., Denver 19
 Mr. John B. Hawley, Jr., P. O. Box 7 Col. Hgts., Minneapolis 21, Minnesota

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Review of Book—

"How to Grow Better House Plants"

By ESTHER C. GRAYSON

A new book by the well-known flower and garden author-editor, Esther C. Grayson, which she has titled "How to Grow Better House Plants" provides a concise and practical guide for those who like to grow plants in the home. This book presents over a hundred different kinds of plants which can be successfully grown indoors, some for foliage beauty and some for flowers. The author gives full and easy directions for their propagation and culture.

An important feature of the book is an indexed chart which can serve as a guide in the selection of plants to fit every home condition — sunny rooms, shaded rooms, warm rooms and cool rooms — with suggestions on how to get the best growing results for year-round beauty. There are many plants proposed for luxuriant foliage greens or bright, exotic flowers to cheer the shut-ins during drab winter days.

From over sixty different family classifications, Esther Grayson has chosen varieties most easily found in greenhouses, nurseries and flower shops of the shopper who seeks the touch of nature through potted plants in home window gardens and on tables. Such plants as Orchid

Cacti, African Violets, Glory Lily, princess flower, Shrimp Plant with their white and purple blossoms surrounded by salmon bracts, Veltheimia, Bouvardias, Flowering Maple and dozens more to thrill the housewife who wants the growing colors of nature in her home.

Besides serving as a guide in the selection and growing of plants in the home, this new book tells about feeding and general culture, how to grow new plants from old, how to make potting mixtures, how to arrange indoor gardens and how to control insect pests. Many plant varieties are illustrated from photographs taken by the author. The Grayson book is being published by the Hydroponic Chemical Company of Copley, Ohio, and a copy may be obtained direct from them by sending \$1 with request for book on "How to Grow Better House Plants."

**Merry Christmas
and
Happy New Year**



To All Our
Green Thumb
Friends



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MEMORIAL FORESTS

By FRED R. JOHNSON

THE motorist driving along the beautiful new highway (U.S. 550) between Durango and Silverton passes thru many acres of planted trees. A rustic type sign with these words:

**"Memorial Plantation
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Women's Clubs**

San Juan National Forest"

arouses your interest. It is an inspiring sight to see these young lodge-pole trees, extending over hill and dale. Here and there one sees fire scarred snags, remnants of a once mighty forest.

What caused this devastation? Were the Indians responsible? No, dear readers, it is generally accepted that most of the fire scarred mountains in Colorado are the result of the carelessness of the white man since his arrival nearly a century ago.

Early day prospectors did not like dense forests. They made it too difficult to locate mineral outcrops, so many fires were set to open up the

country. Locomotives on early day railroads thru the mountains belched out great volumes of hot cinders that started more fires.

Before the National Forests were established, the cutting of *green* timber on government-owned land was prohibited. However, sawmill operators could cut all the dead timber they wanted. So it was common practice for loggers to start fires in bodies of timber they wanted to cut. Sometimes these fires got out of hand and destroyed large areas of forest.

The denuded area along the Durango-Silverton highway, known as the Lime Creek Burn, was the result of a fire started in 1881 by a surveying crew which was seeking out a route for the railroad between these two towns.

Most of the Western National Forests were established in the early part of this century. Organized fire protection was started soon after, and in the fifty years that have elapsed, the fire loss in Colorado's National Forests totaled about 50,000 acres.

That sounds pretty large, but early day records state that more than that amount was burned in one year during the 1880s.

Secretary of Agriculture James Wilson conceived the idea of sowing these vast areas of burned forest lands with tree seed, much as grass seed is sowed. Some seed was broadcast with cyclone seeders, some was sowed with hand corn planters. Unfortunately, much of this seed fell on rocky and barren land, as in the Biblical parable, or it was eaten by birds and rodents, and the results were poor.

One of the areas, seeded in 1911 on the Lime Creek burn, was crossed off as a failure and forgotten until 1929, when a bright young forester, who knew nothing of the early planting, excitedly reported that he had found lodgepole pine growing there, one hundred miles southwest of the nearest natural stands of this species. Older heads discounted this extension of the species' range. A search of the records revealed that lodgepole pine

seed had been sowed there.

Occasional small plots had been planted with Engelmann spruce, since the original forest had been the spruce-fir type. Heavy losses and slow growth made it look like a hopeless task to reclothe this important watershed with trees. Meanwhile the 1911 lodgepole, the result of seeding, continued to make a much greater growth than the native spruce and fir.

Accordingly, in 1937, some two year old lodgepole pine nursery grown seedlings were planted and these grew even more rapidly than the trees in the seeded plot.

Also, in 1937, the Colorado Federation of Women's Clubs had sponsored a Memorial Forest in cooperation with the Forest Service as a conservation project. This forest of 59 acres is located ten miles north of Woodland Park in the Pike Forest. Another memorial forest of 45 acres was planted in 1938 in the White River Forest along Independence Pass highway, ten miles east of Aspen.



The Women's Clubs in southwestern Colorado then asked the Forest Service if they could have a Memorial Forest in their part of the state. Under the leadership of Mrs. Engred Melburg, Secretary of the Nissaki Study and Garden Club of Silverton, other clubs cooperated, with the result that in 1940, '39 acres were planted on the Lime Creek burn and dedicated as a Federation Memorial Forest. Other clubs throughout the state have joined in the movement under the leadership of Conservation Chairmen, Mrs. Emily Borgert and Mrs. R. S. Hill of Denver, and the present chairman, Mrs. F. H. Trimble of La Junta. And now there are 203 acres dedicated as a Memorial Forest out of a total of 1,504 acres planted by the Forest Service on Lime Creek. Mrs. Trimble expects to continue this important project in the Federation program.

Each club which contributes to the planting of one or more units of 500 trees, at \$5.00 a unit, receives a certificate in scroll form. This contribution, of course, does not cover the entire cost of the planting and of the seedlings, which are raised at the Forest Service Nursery near Monument, Colorado, but it creates an interest in conservation and a pride of ownership in a portion of our Na-

tional Forest. It brings home to these groups the facts that these National Forests are truly the people's forests. If and when selfish interests try to appropriate these forests to their own uses, the Women's Clubs are certain to object strenuously.

Other organizations have also participated in the Memorial Forest program. The Colorado Federation of Garden Clubs has one near Manitou Park on the Pike Forest. The Colorado Chapter of the Daughters of the American Revolution has four Memorial Forests—all appropriately marked. One is near Ward on state highway 160 on the Roosevelt National Forest; a second is near the old mining camp of Independence on the White River Forest. There are two on the Arapahoe Forest — one near the east edge of Idaho Springs and the other on the west side of Berthoud Pass on U.S. 40. The Business and Professional Women's organization in Colorado is the latest group to sponsor a Memorial Forest.

So when you drive over the "Million Dollar Highway" look for the beautiful young forest of lodgepole pine about ten miles south of Silverton. These Memorial Forests evidence, in a practical way, the interest in conservation of many of our women's organizations.

METROPOLITAN DENVER PARKS CONSERVATION COMMITTEE

FRIDAY afternoon, Oct. 23, saw the first meeting of the newly selected committee to study the possibility of reserving adequate parks areas in the fastly growing sections adjoining Denver.

Of those invited 10 attended this meeting at Horticulture House and were very enthusiastic as to the pos-

sibilities and concerned about the need. Mr. DeBoer acted as chairman.

Invited to this first meeting were: Harold A. Hubler, J. Kernan Weckbaugh, Milton G. Janecek, Gordon A. Holmes, Houstoun Waring, Jas. J. Ball, Wm. B. Mansfield, Mrs. Persis Owen, David Munns, L. L. Aitken,

Jr., C. M. Lightburn, Mrs. Jas. J. Waring and Milton Keegan. Others, representing additional areas, will be added later.

The purposes and objectives of the committee are well given in a statement presented to all members of the committee by Chairman DeBoer.

"During the post war building boom, many areas have been fully built up in the whole region and most of these have not set aside public land for recreation purposes. Today the Denver metropolitan built up area has 3 times the population which the city had in 1910. In this process of building, most of the scenic areas of the region have been denuded. The Colorado Forestry and Horticulture Association is concerned about the trend of this type of development in the metropolitan area. The question has come up whether it is necessary that all existing natural scenic beauty must be destroyed or whether it is possible to preserve some of these lands for the use of all the people of the region. In doing this, we must not think of highly polished bluegrass parks, but we must think of the conservation of the values which exist today.

Much of this land is located around the streams and in many places is subject to flood hazards and is not of great value for building purposes. Other lands are hilltops and steep slopes where distant views are possible. Frequently these areas can be preserved without great cost. This was done at Inspiration Point near Berkley Park; also, at Panorama Point on West Colfax Avenue. In the plans of Denver, Ruby Hill will be treated in a similar way.

In the philosophy of our present era with its ever greater speed of living, and with its terrorizing wars and inventions, there is a great need for

places of quiet and country atmosphere. That this is the case is well proven by the great numbers of people who visit the parks of the Denver region on Holidays. The Denver City Park, on days like that, has visitors which number from 90 and 100 thousand people during the day, and the other Denver parks have similar crowds. The City Park in Englewood is as crowded as any of the Denver parks.

The need for active recreation is growing by leaps and bounds and more land must be made available for this purpose. Similarly, land for picnicking must be found inside of, or near, the built up areas of the region.

To accomplish this it is, in the first place, essential that the people of the region understand that the city building of today is lagging behind that of former days when the character of the Denver region was established. The work of this committee will be that of setting principles for the development and indicating such areas as may seem to them valuable for conservation. The make-up of this committee is that of a citizen group, representing all of the areas of the region. The recommendations of the committee may eventually be submitted to the governments of the various cities and counties of the region."

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A Merry Christmas and Happy 1954

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DECEMBER GARDENING

WHILE the active things in gardening are not so urgent now there are still things that a good gardener will want to do to keep his thumbs green. The garden activities are partly carried indoors to the sunny window or concentrated on the inanimate things out of doors.

The most important consideration that we can now give the living plants is to protect them in the necessary ways from the severity of winter. This may mean making a shelter over the low evergreens that might be crushed with snow sliding from the roof, it may mean wrapping the trunk of tender-barked trees, it might mean erecting a shade of some sort to the southwest of borderline plants or hilling soil around others.

Trees and shrubs should be checked over to see if there are bad crotches, heavy horizontal limbs or such dangerous conditions that should be taken care of. At the same time it might be well to cut off those low-hanging or wide-sweeping limbs from the trees and shrubs, which when weighted with snow might obstruct drives or walks.

This is usually the most economical time of year to remove decadent trees, as landscape help may not have too much more important things to do now. It is sometimes difficult to persuade a home owner of the importance of planting trees but it is much more difficult to persuade them to remove a tree when it has served its purpose, is crowding other, more valuable, things or is dangerous. The materials that a landscape architect works with are not permanent like those of an architect or painter, but they consist of living plants that grow or die. So, a landscape picture must be continually re-touched.

There are usually many weeks through our winters when construction work on fences, walks, walls, platforms and pergolas may be done. An appropriately designed pool or platform will give character to most gardens.

Check the house plants every few weeks over winter for signs of insect, disease or nutrition damage. There is no one cure-all but each plant requires that its particular requirements must be met. A plant may not be growing or blooming because it is too wet, too dry, too hot, too cold, overfertilized or starving. Check until you find out what your trouble is.

While you are at it, better start a note book and put down the ideas as you get them for carrying out next summer. You will probably also want to start a scrapbook where garden material can be classified and made available for quick finding during the busy months next year.

On warm sunny days prowl around the mountain slopes and roadsides for weed stems, seed pods, leaves and other material that will make good winter arrangements. It is double fun; finding the material and putting it together so that it looks well. Include some evergreen twigs and some red berries and you have the finest of Christmas decorations.

Anyone with a garden or even two trees and a lawn will appreciate for Christmas a copy of George Kelly's book

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